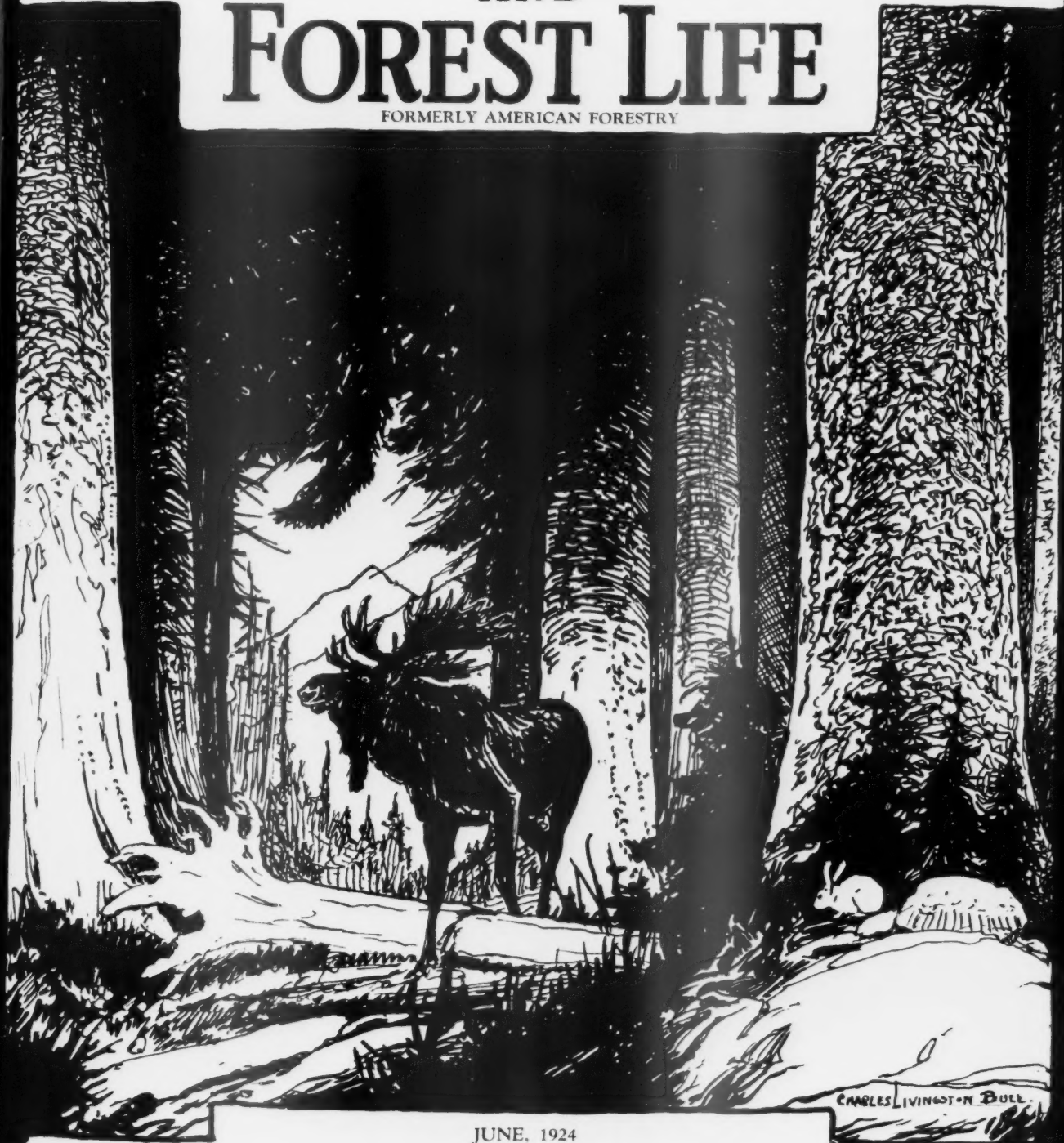


AMERICAN FORESTS AND FOREST LIFE

FORMERLY AMERICAN FORESTRY



JUNE, 1924

MEN OF THE TREES : : BIG GAME IN ALASKA
THE FIGHT FOR BRIGHT ANGEL TRAIL

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The American Forestry Association

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The EDUCATION OF THE PUBLIC, especially school children, in respect to our forests and our forest needs; a more aggressive policy of RESEARCH AND EDUCATIONAL EXTENSION in the science of forest production, management, and utilization, by the nation, individual states, and agricultural colleges; reforms in present methods of FOREST TAXATION, to the end that timber may be fairly taxed and the growing of timber crops increased.

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(Formerly American Forestry)

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OVID M. BUTLER, Editor

WASHINGTON, D. C.

L. M. CROMELIN, Assistant Editor

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JUNE, 1924

No. 366

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Member A. B. C.

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His Majesty the White Ram of Alaska Has Probably Suffered Greater Depletion in the Territory as a Whole Than Any Other Variety of Big Game to be Found There. This is a Photograph of One of the Writer's Trophies

AMERICAN FORESTS

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The Game Situation in Alaska

By HAROLD McCracken

THERE is no more important question confronting American game conservationists today than the situation in Alaska. Ever since the first comprehensive law for the regulation and protection of the game of the territory went into effect, August 1, 1903, the situation has been unsatisfactory, despite important amendments to the law. The inefficiency of the law has resulted from several causes. In the first place, the exercised control has been too widely divided among the different Federal departments and bureaus, with overlapping jurisdictions and somewhat conflicting authority, to provide centralized power to meet emergencies and changing conditions.

Of second importance has been the lack of hearty co-operation and assistance on the part of the people of Alaska. This has not been, however, because the residents of Alaska are not vitally interested in their local situation or in the conservation of the game within the territory, but mainly because they have felt that the laws have not been entirely in accordance with existing conditions and because they have had little or no say in their enactment or legal enforcement. Then, too, there has been a dire lack of proper financial support to make possible proper enforcement through an adequate number of game wardens.

One of the most commendable proposals for a proper

and effective regulation of game conditions is the "Alaska Game Act," presented in the House of Representatives on January 22, 1924, by Mr. Sutherland, Territorial Representative from Alaska. The purport of this law, briefly, is to create an Alaskan Game Commission to protect game animals, land fur-bearing animals, and birds in Alaska, and for other purposes. This law will center

authority and control in a game commission of five members, four of whom are to be Alaskans of not less than five years' residence, and representing each of the four judicial districts, with the head Biological Survey man as a member of the commission and its secretary and executive officer. To this body of men is given practically absolute authority to revise the game laws and to enact such new laws and regulations as they shall deem advisable for the proper control of the situation.

This will centralize authority and power; it will take the administration of the game laws out of politics, and there is not the slightest doubt but that it will meet with the hearty approval of the people of Alaska and foster that co-operation and

assistance which has so long been missing, and needed.

A BIRD'S-EYE VIEW

Alaska is our last great frontier and wilderness. It is the only part of our great commonwealth where big game



© Harold McCracken

"LORD OF THE KENAI"

The Alaskan moose, by reason of its great size and massive spread of horns, ranks among the most magnificent of the big-game animals of the earth.

is still to be found in any abundance, and it affords the home heaths of the finest species of those big creatures of the wilds that have in recent times been existent on this hemisphere. There are in the territory a number of sections that are most ideal sanctuaries for these fine creatures, and that offer splendid opportunity for the preservation and perpetuation for generations to come of almost all varieties of game animals to be found there. A complete shutdown of hunting is not necessary, but a speedy and rigid enforcement of proper regulations and restrictions must be made, for already some of the species have been sadly depleted in a number of sections.

It is impossible intelligibly to generalize on game conditions in Alaska. The territory is more than one-fifth the total size of the United States proper and embraces a remarkable variety of conditions. It is a question of particular districts, and one cannot set forth the bear situation on Unimak Island and apply it to the Mount McKinley district, or moose conditions on the Kenai Peninsula and apply it to even so close a district as that along the Susitna River.

WHO DEPLETES THE GAME?

For the proper preservation of game and the enacting of proper laws to that end, one must first consider just who and what it is that is responsible for its destruction.

The majority of the laws are made to govern the actions of so-called "sportsmen," or those who go out to hunt for trophies and pleasure. In thickly settled areas, such as in the various states, that is probably the proper thing; but in such places as most parts of Alaska, there are far more detrimental factors than the comparatively few sportsmen who each year make hunting trips to the territory. The average sportsman goes merely for the trophies; as a rule, he does not kill more than his license calls for, and he leaves a goodly amount of the "coin of the realm" for each and every head and hide that he takes. Nor is it, as a rule, the class of people who settle in the country as pioneers and permanent residents that do great damage, for they seldom take more than they actually use for food and most assuredly are entitled to. Those who are mostly responsible for the wanton destruction of the game are, first, the Indian and Eskimo; second, the market hunter; and, third, the floating population of workmen and em-

ployees of canneries, mines, and construction camps, and especially those of this class who "winter" in Alaska to dabble in trapping and hunting.

THE INDIAN AND ESKIMO

The Indian and Eskimo undoubtedly do more for the wanton destruction of game in Alaska than all other elements combined. They have the undisputed and virtually unrestricted privilege of killing whenever and whatever they choose. Lacking any understanding of conservation,

they enjoy a very disastrous liberty—one which I doubt is in any way justifiable. It is the native who kills and uses only the tongue for food and slaughters as long as he has ammunition and the game is within range—for dog feed, fox bait, etc.

The introduction by the Government of Eskimos onto the Alaska Peninsula has been largely responsible for the disastrous depletion of the caribou there. During the winter of 1916-17, which I spent traveling over a large part of that section, I saw

herds of caribou numbering upward of a thousand animals to the herd. On my last trip to that same section, in the winter of 1921-22 and spring and summer following, covering the same ground and a great deal more, the largest herd I saw numbered about fifty animals.

There is little doubt but that the Eskimo is the answer. I have seen dog team after dog team leave an Eskimo village on the Bering Sea coast and go out to scour the country for caribou, returning with only the sinew, with which the women do their sewing. Practically all of that sewing is of such a character that commercial thread would answer the purpose just as well, if not better. Then they kill for dog feed, which is absolutely unnecessary, as a little work will provide them with an abundance of dried salmon (a more desirable food) for any number of dogs.

The practice of killing caribou for fox bait is, unfortunately, not entirely confined to the native. I have on numerous occasions found not only one, but as many as eight, of those fine food animals shot down merely for the purpose of making sets for foxes in the trapping season.

Another detrimental practice of the native is that of killing the female caribou in the spring for the skins of the unborn calves, which are highly prized for use in the making of fancy parkas (coats), though that practice



THE WRITER IN FRONT OF A TUNDRA HOME

Few men know Alaskan game like Harold McCracken. He has spent months and years on the game trails of the great Northwest, and has weathered two winters with the Eskimos, who gave him the name Iglaome.

is not now carried on to the extent that it was a few years ago.

As for the matter of even legitimately used food, I cannot personally see why the native should be given any more privileges than the white man who has settled in the country to make it his home. The native's taste is more naturally adapted to seal meat, fish, ducks, and the like than it is to caribou meat. Not that he should be restricted to that, but he can thrive on such food as the average white man cannot stomach. And as for clothing, the only use which the native makes of caribou skins is for *parkas*, and the skin of the legs for fancy *muk luks* (fur boots). Four or five skins at the most will make him the most particular *parka*, good for from three to five or six years' wear. Further, the skins of ground squirrels make as good a garment as the caribou, and they can be snared by the hundreds around any village. All things considered, there is no really good reason why the native should be permitted to enjoy these quite unlimited privileges. If they are continued as at present, there will soon be no game either for himself or his white brothers. Similar conditions exist in many other sections of the territory.

The fact that the caribou is one of the most desirable food animals in Alaska, and that there is not a game

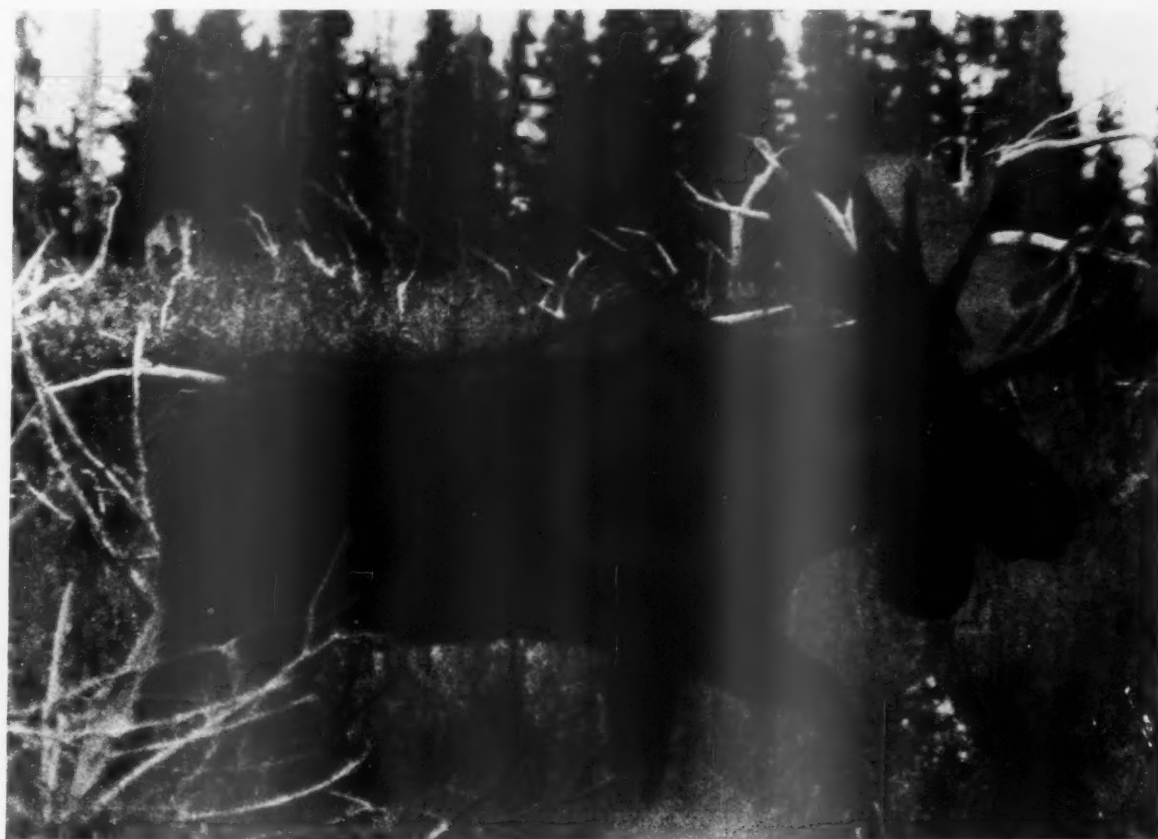
warden in the whole district along the Bering Sea coast of the Alaska Peninsula, makes this question one of considerable importance.

MARKET HUNTERS

Next to the native in point of game depletion has been the market hunter. While his range and distribution have very fortunately been greatly cut down and are now almost things of the past in many sections, yet his work has indeed been one of sad results. Certain sections have not and may never recover from the effects of his operations. Until a very few years ago, practically every mine and construction camp employed a regular hunter, whose work it was to keep the cook-house supplied with game. As a result, sheep and moose have been almost completely exterminated in certain local sections, and the herds of caribou have furnished a wholesale supply of meat in other districts. This practice is still carried on to some extent in isolated places, though the market hunter who once found his outlet openly in the town butcher shops and restaurants has almost disappeared.

HOLIDAY HUNTERS

There is an element in Alaska, as there is in every frontier country, that takes everything and gives nothing.



© Harold McCracken

A BULL OF THE KENAI

The Kenai Peninsula game country is the most accessible for sportsmen in all Alaska. A hunter can be in the heart of the moose or sheep country within 36 hours' travel after arriving at Seward from the Seattle boat; and in this country a sportsman can be absolutely sure of getting his moose, and a good big specimen at that.

It is that floating population which is imported each season to do the labor in the canneries, mines, and construction camps, comprised commonly of aliens without interests beyond the gratification of immediate personal desires. In most of the canneries the workers are hired in the states, transported to Alaska on the company's boats, supplied everything they need by the company, and then at the end of the season shipped back to the states, where they are "paid off." This is also the case in some Alaskan industries.

A great many of these plants are quite accessible to some of the best game sections, and regularly, when free from their work for a day, numbers of these men go out into the hills in search of game. No class of men should be condemned or prohibited from enjoying the sport of hunting, but so very many of these men go from the sheer desire to kill, and do not bring back so much as horns, hide, or a piece of meat.

THE EAGLE

The eagle question in Alaska is one which indirectly has a definite bearing upon the game situation, because these great birds prey extensively upon the young of the mountain sheep, goat, caribou, deer and rabbits, ducks, ptarmigan, etc., all of which are a source of most desirable food. In view of this fact, the territorial legislature of 1917 placed a bounty of 50 cents each upon every eagle destroyed. Just recently this enactment of that legislature has been most severely condemned and criticised in an article by a certain western naturalist, who quite elaborately sets forth the crime which has been perpetrated by the wholesale slaughter of these great birds, and makes a very fine plea for the species which is our national emblem. While I am personally growing day by day in every way more and more of a conservationist, I cannot wholly agree with the attitude set forth by that

writer (*Nature Magazine*, November, 1923). Probably it is best to let the creatures of the wild work out their own salvation; but, knowing the Alaskan eagle as I do, I can really see little in his favor—other than that of sentiment; nor have the people in Alaska so nearly exterminated these birds as that article would lead one to believe. In fact, on a rather extensive trip through some of the game districts, which ended for me about a year ago, I saw but little difference in the numbers of eagles as compared to five years previously. The small handful

of people in Alaska have far too much else to do totally to exterminate the eagles at 50 cents each and if the game situation had no more serious phase than the extermination of the eagles, they would not need the few game wardens now employed.

THE ALASKA BROWN BEAR

The Great Alaska Peninsula brown bear, or Kodiak grizzly, as he is popularly called by many, is the largest of all present-day carnivora or flesh-eating animals on the earth. Although he is unfit for food and his hide is of little value except as a trophy, he ranks alongside, if not ahead of, the big moose in point of importance from the standpoint of the hunter-sportsman and game conservationist. My experience with these big bears has been wider and more complete than with any other variety of Alaskan big game. He has been a sort of hobby with me,

and I have found him more interesting than any other creature it has been my good fortune to come to know.

The same old fellow has been the subject of a bitter controversy in Alaska, which has raged for years. The average Alaskan may strongly resent the protection accorded him, on the basis that he is of no earthly good and is a menace to human life. He has in truth taken his toll of human lives in the territory, although virtually every one of the cases which have come to my attention can be credited to some other cause than unprovoked attack.



© Harold McCracken

WHERE THE ALASKAN RAM IS AT HOME

Though his home is high up among the most inaccessible rocky mountain peaks, his species is today threatened with extermination, for the flesh of the mountain sheep furnishes what is widely considered the most delicious of all game meats.

In the killing of twelve of these animals, on my various trips, only one of them ever "charged" after being wounded, and in all of my experience I have found him quite as good-natured and amiable a creature as could be expected of a king of carnivorous animals, and always ready to take to his heels upon scenting the presence of man, rather than to pick a fight. Not that he is cowardly or will not put up a dangerous fight, if necessary, but he certainly does not go around with a chip on his shoulder, as many believe. It does not necessarily follow, just because a person is an Alaskan or has been a resident there for any length of time, that he really "knows" the big brown bear. I believe that a certain part of the Alaskan public has an exaggerated



© Harold McCracken

A SUCCESSFUL CUB FISHERMAN

The Alaska brown bears feed almost entirely on salmon, though they prey to some extent upon moose, caribou, and sheep. The young cubs take enthusiastically to the sport and soon become quite adept fishermen, easily catching enough salmon to supply their own needs.

idea of the ferocity and aggressiveness of these animals. The very best explanation of the actual temperament of

this creature is, I believe, graphically portrayed in the films which I have made of them. On several occasions they saw us and came amiably and curiously over to investigate, but upon getting the slightest scent of us immediately took to their heels and kept going until at a safe distance.

One of the most unfortunate things that the Alaskan Game Commission might do would be to abolish the protection now given the brown bear; for, because of his habits and the character of the Alaska Peninsula, where he makes his home and where he is most plentiful, and its lack of timber or ade-



© Harold McCracken

A KODIAK "MADONNA"

The great Alaska Peninsula brown bear is popularly called the "Kodiak grizzly." He is the largest of all carnivorous animals on earth and most interesting of all the big-game animals, both from the standpoint of the hunter-sportsman and the game conservationist. A bitter controversy has raged about him in Alaska for years, revolving around the question "To be or not to be" (protected).

quate cover, he will become a scarce animal quite soon enough, even with the usual protection. During the period of my observation, which has been about five and a half years, he has already become quite scarce in sections where he was plentiful at the time of my first trip into his country. At least certain sections should be set aside where he would find a permanent sanctuary and adequate protection as a species.

The distribution of the Alaska brown bear, taking in the different types of his kind, extends in quite varying abundance, especially along coastal regions, from Icy Straits or the upper end of the Inside Passage to Point Barrow. They are scarce at all points north of Bristol Bay. Their range extends for some distance back into the interior, where it seems to be transitory with the variety more definitely known as the true "grizzly."

These animals are most plentiful in a comparatively small district near the western end of the Alaska Peninsula, on the Bering Sea side. They diminish in numbers as one goes back towards the continent, though in certain secluded local districts they are to be found in comparative abundance.

On my sojourn in the section around the western end of the Alaska Peninsula, which was in 1922 between the break-up of spring until August, I saw 190 brown bears. Just how many were recorded in my diary a second time I cannot say, but every possible care was taken not to record the same bear twice; and that number would probably have been 250, had every bear that was seen been tabulated. The fact that we saw 28 bears in a single day, and as high as 12 in sight at the same time, is in itself good evidence of the numbers to be found. This was in covering about 100 miles of territory. And yet I talked with a member of one of the oil prospecting parties that spent the entire summer on the Peninsula not over 350 miles from there and who had not seen a single one of these animals during his whole stay. I returned to the states with a New York sportsman who had diligently hunted for brown bears along the mainland side of Cook Inlet and got only one small and rather poor specimen.

As evidence against these big creatures, it is to a certain extent true that they prey upon such animals as the moose, caribou, and sheep, which are desirable as food. I believe that there are very few caribou that are killed by bears, though in the fall, or "rutting" season, the "grizzlies" go into the moose country evidently to prey upon the bulls that become crippled in their annual battles.

I have been told by reliable persons of the grizzly "hunting" sheep. It is said that they lie in wait for the sheep to come to their "licks" or to pass along trails where the bears can lie in hiding and then spring upon the unsuspecting animals; but, as I have found them on the Alaska Peninsula, their main item of food to the extent of probably 90 per cent is salmon. In the interior the percentage of grass runs about that high, with berries a major item in season, and roots and ground squirrels as a minor variation.

His Majesty the White Ram of Alaska has probably suffered a greater depletion in the territory as a whole than any other variety of big game to be found there.

THE MOUNTAIN SHEEP

Though making his home for the most part high up among the inaccessible rocky mountain peaks and occurring in great abundance in some districts only a few years ago, his species is today threatened with possible extermination.

On a trip in 1916 into the sheep country of the St. Elias Alps district, I saw as high as 200 of these animals in sight at one time and several herds of around 75. I have information of as many as 1,500 being visible from a single point of view. Unfortunately for their own particular well-being, the mountain sheep furnishes what many people consider the most delicious of all game meats, and so they supply the tables of a good many mining camps and towns.

The sheep is not especially prolific. The ewes generally have one, and rarely two lambs; nor are the lambs particularly hardy, as compared to the young of other game animals. The eagles take a goodly toll of the lambs each year, and even the lynx has an occasional meal of their tender meat. Their range is generally distributed throughout most of the mountainous sections of Alaska, though they are today rather scarce within close proximity of most of the towns and railroads.

THE MOOSE SITUATION

The Alaskan moose, by reason of its great size and massive spread of horns, ranks among the most magnificent of the big game animals of the earth. These animals are distributed quite generally throughout the territory and are abundant in a few sections, especially on the Kenai Peninsula and the district around the headwaters of the South Fork of the Kuskokwim River. I have found them but sparingly along the Susitna River and its tributaries; even more scarce on the upper Copper and Chitina rivers, though in greater numbers on the White River. I understand they are again increasing in numbers on the Yukon and Tanana rivers and their respective tributaries. They are, of course, absent in all the tundra sections.

It was stated by a writer in *AMERICAN FORESTRY* last year that the moose on the Kenai Peninsula are being rapidly exterminated. My own investigations in that region lead me to believe that the writer exaggerated somewhat the moose situation. His general statements apply better to some other section than to the Kenai Peninsula, where conditions as regards moose are more satisfactory, all things considered, than game conditions in most other sections of Alaska that I have visited.

It is quite true that there are very few moose to be found along the railroad, and that the rabbits are responsible for the death through starvation of a great many moose by their killing by "barking" of shrubs and trees on which the moose depend for their mid-winter food supply.

[Continued on page 362]

Out of Doors

BY THEODORE ROOSEVELT

Chairman, The President's Committee on Outdoor Recreation

OUR national character has been built, perhaps more than anything else, on out of doors. It was the men who conquered the wilderness who bequeathed to us our outlook on life. For three hundred years our people were pushing westward through the trackless forest, over the plains and mountains. Now our frontier is gone. The sturdy self-reliance, simplicity, and courage that come with frontier life must be guarded as the most precious possessions of our country. This is particularly true today because of the great material development of the past fifty years. We have emphasized comfort, physical comfort, more and more, as the years have passed. Physical comfort is excellent, material development is excellent, but both can easily assume an undue proportion in our scheme of living. Softness of body is too often bred of soft living, and softness of body very often predicates softness of soul.

Perhaps there is no better way to preserve the sterling virtues which have made and kept us a nation than active participation in out-of-door life. All of our country forms a background for outdoor recreation—streams, mountains, and forests. The forests, however, we may call the backbone of it all. In the earlier days, when we were taming the wilderness, our country consisted of a fringe of settlements along the Atlantic coast. Back of these settlements were the great woods, the backwoods.

In our literature, in the common expressions of those days, you will find the term backwoodsman. The back-

woodsman is now but a name. We, his descendants, must keep not only the traditions of the name, but the actuality of his character to hand on to our children.

The march of civilization has stripped our country in great measure of our forests.

We of this generation, therefore, must give particular attention to protecting and preserving what is left.

If we do not, they will soon follow the Indian and the cowboy over the Great Divide.

Without our forests, outdoor recreation, in the fullest sense of the term, is impossible. Life in the forest makes not only for health-building, but for character-building as well. The man or woman, boy or girl, who can and does get away to the woods comes out stronger and better physically, as well as stronger and better morally. All campers are fully aware of the truism that out in the open camping you will find just what the character of a companion may be. The man who always takes the best food from the frying-pan, the man who appropriates for himself the most comfortable place to sleep, all of us campers have met and know. Camping trains men and women to be self-

reliant. It trains them to be thoughtful of others. It gives them a simpler outlook on life. There is no better way of estimating values than to go to the woods and rough it.

President Coolidge's conference on outdoor recreation will have many and important matters to consider. None, in my opinion, however, are more important than those concerned with preserving for all, and making available to all, the forests of this country.



THEODORE ROOSEVELT
Assistant Secretary of the Navy



Men of the Trees

*Wherein is Told the Remarkable Story of the Forest Scouts of Kenya,
Formerly a Band of African Warriors Known
as Forest Destroyers*

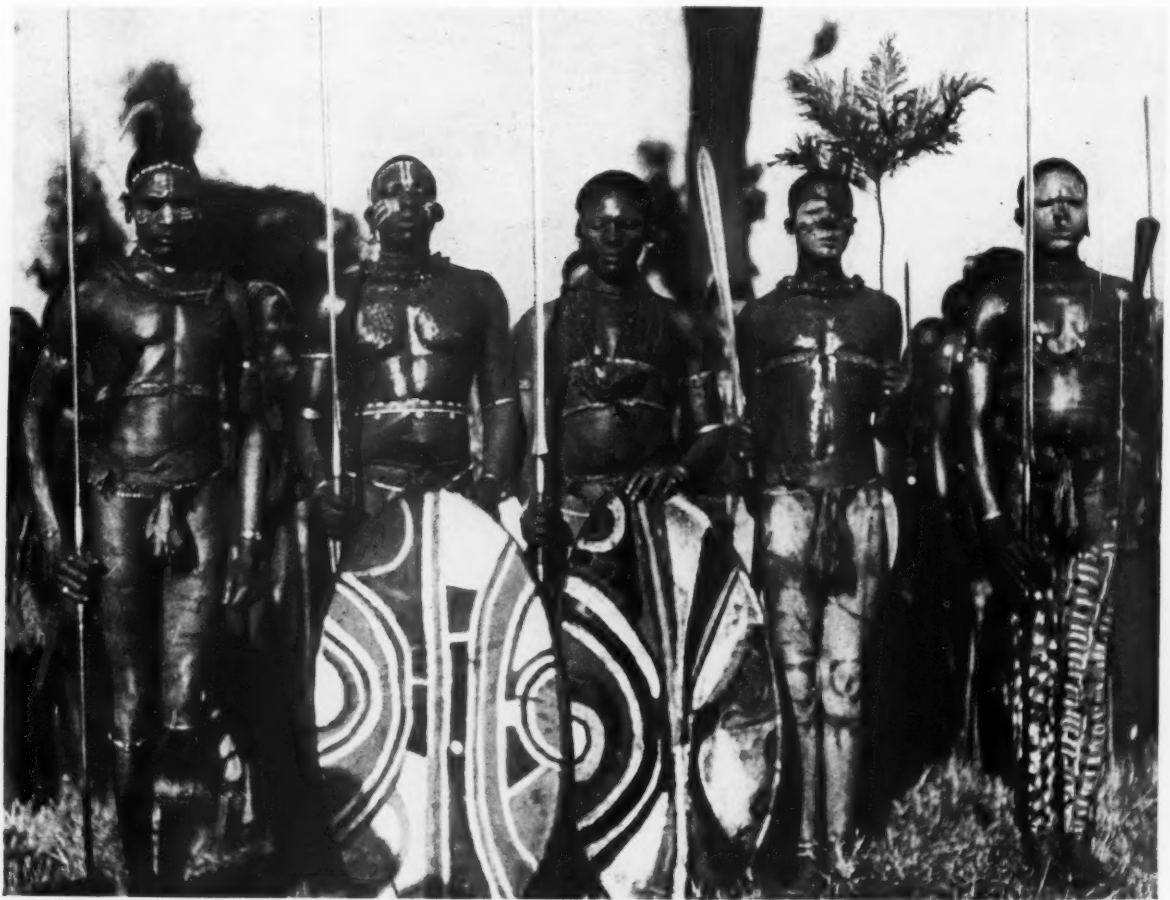
By R. ST. BARBE BAKER

Late Assistant Conservator of Forests, Kenya Colony

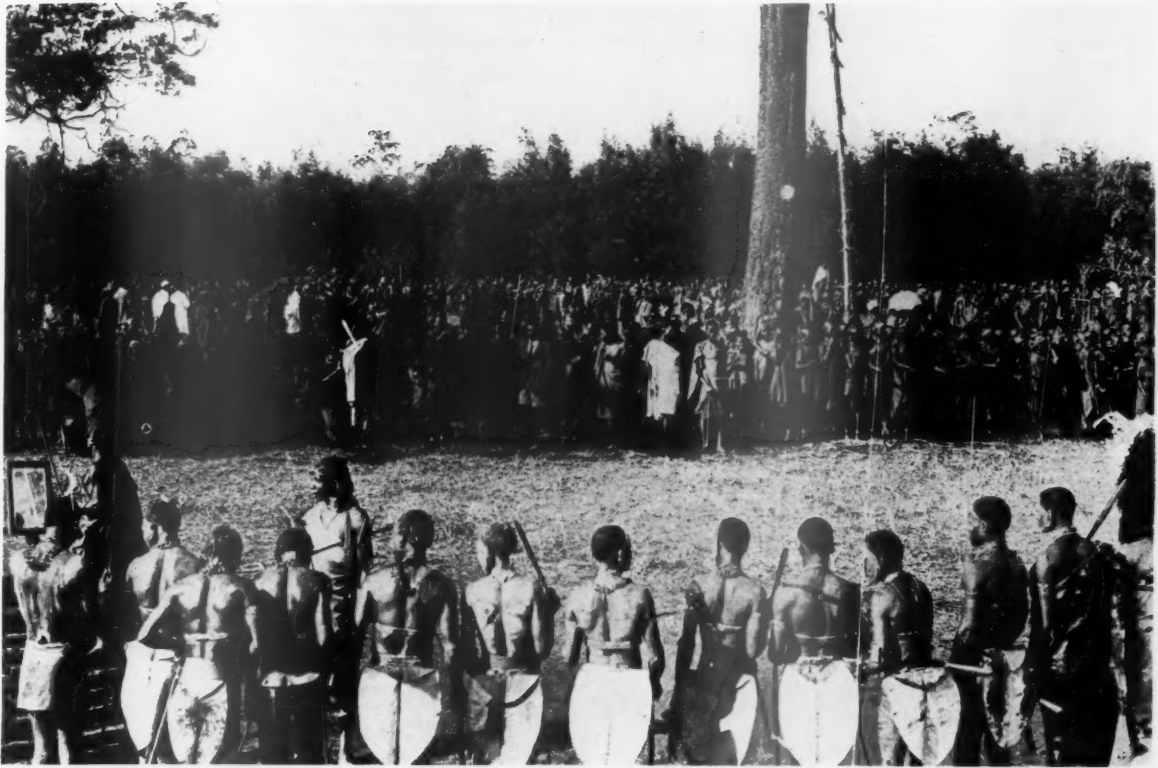
WHO are the Men of the Trees, or the Forest Scouts of Kenya, as this body of Africans has now come to be known? They are a band of some thousands of warriors who inhabit the highlands of Kenya Colony, formerly British East Africa. This organization originated among the Kikuyu tribe, who were locally known as "The Forest Destroyers" by reason of their shifting methods of agriculture. Whenever they wanted to make a fresh cultivation they went into the virgin forest, cut down and burnt off the trees, planted

their seeds, and reaped two crops, after which they abandoned the old cultivation and proceeded to take up more land, repeating the same process of destruction until the whole countryside became denuded of trees.

When I first went into this country I pitched my tent on a hill known to the natives as Muguga, which means a treeless place. Here I looked out over a country which at one time had been all virgin forest, but was now bleak and bare. It was a fact that the rainfall had considerably decreased since the disappearance of



WARLIKE APPEARANCES TO THE CONTRARY, THESE MEN HAVE PLEDGED THEMSELVES TO PLANT AND TAKE CARE OF TREES EVERYWHERE. THEY WERE FORMERLY A BAND OF YOUNG KIKUYU WARRIORS KNOWN AS "FOREST DESTROYERS"



THE INAUGURATION CEREMONY OF THE MEN OF THE TREES, WHO AFTERWARDS CAME TO BE KNOWN AS "THE FOREST SCOUTS OF KENYA." ON THIS DAY THERE WERE OVER 3,000 MORANS, OR NATIVE WARRIORS, PRESENT AT THE BAKER CAMP

the high forest, and this was beginning to reflect adversely upon the crops.

It was not a difficult task to convince the chiefs and elders of the tribe of the importance of tree-planting. Many borazas, or meetings of the chiefs, were held, and the importance of planting trees in the bare spaces was emphasized; and these wise old men realized that something must be done to remedy the situation.

Too often their women folk had to go long distances to fetch, maybe, a few sticks with which to cook their food, and they saw that the day was not far away when there would be a wood famine in their land. At the same time they said they were helpless in the matter and unable to undertake the organization of tree-planting by themselves. It was to the Morans (or young fighting men) that they must look to carry out the work. These Morans lived their care-free lives, their time very much taken up in social engagements and in accumulating a sufficient number of goats with which to purchase their wives. They thought little and cared less of the consequences of a possible wood famine. For their part they did not have to carry the wood and it mattered little to them if their bibis (wives) had to go one hour or two days to fetch the sticks, so long as it did not interfere with their dancing. These young warriors seemed to think of little else than attending n'gomas (native dances). If the news spread that there was to be a dance, they would come from far and wide to attend; so it was under

the pretext of dancing that on an appointed day three thousand stalwarts of the tribe turned up at my camp.

It was a sight to be remembered. Long before the hour fixed, they started to arrive. On they came in companies, each headed by their captain—first the juniors and finally the older men—their bodies painted in picturesque or fantastic designs and each man carrying his spear and shield, as if prepared for battle. They fell in by ranks, in front of a platform which had been previously erected, and took their orders from their respective captains. When they had all assembled and silence had been called for, I addressed them as follows:

"Men of the Kikuyu tribe, I have brought you together today because a reproach hangs over your tribe. Too long have you been known by the name of Forest Destroyers. In the past, whenever you have wanted to make a new 'shamba' (cultivation) you have gone into the forest and cut down the trees. You have done this because it is there, in the forest, that you have found the best soil. Have you ever thought that it is the trees that make the good soil in which you can grow the best crops? If, then, you are to go on finding good soil, you will have to plant up the old cultivations with trees, so that when all the virgin forests have gone you will be able to return to the young forests which you yourselves have planted. Today I am going to call for volunteers, for men among you who will undertake to plant ten trees each year and take care of trees everywhere."

This day fifty volunteers came forward and a badge of membership was tied on their left wrist to remind them of their obligation. No more volunteers were called for, but after the initiation of the first fifty members each candidate had to be proposed by his chief, who had taken the rank of forest guide. Later on the scout ideal was added, to do at least one good deed each day, and a secret sign and password was instituted to safeguard the organization.

At the initiation the attention of candidates was always drawn to the colors of the Men of the Trees. They are green and white; green to remind members of their obligation to plant trees, and white because every member's heart must be *safi*, meaning clean. If any member had an unfulfilled obligation he could not be said to have a *safi* heart. At first the "good deed a day idea" was not readily understood by them, and often in the evening thirty or forty members would come to my camp and say, "Great White Chief, we have come to you to ask you to help us to think of a good deed. In two hours the sun will set, and so far we have been unable to think of a good deed." This little difficulty was overcome by starting a forest nursery close by, where members were allowed to plant

out fifty young trees, which counted as their good deed. At the same time it was explained to them that this was not necessarily the best kind of good deed; they must *search their hearts to find other things* to do.

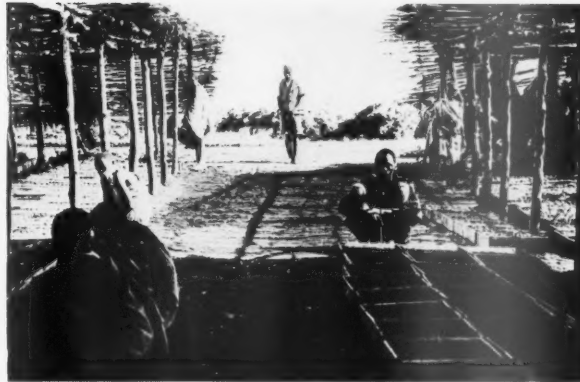
Since these early days candidates have learned to understand the true meaning of the scout ideal, and often little deeds of kindness are done to assist, maybe, a neighbor or an old woman. There have also been instances where members have come to the assistance of settlers and refused to accept rewards, as they are Forest Scouts. One day a settler was proceeding to Nairobi with a load of produce in his Ford, and as he approached a particularly muddy stretch of road "Tin Lizzie" came to a standstill and refused to be coaxed on her way. Forest Scouts came to the rescue and pushed the car on to firm ground. When the settler was ready to start off again, he offered baksheesh to the leader of the party who had come to his assistance. He was greatly surprised, however, when this boy spoke up for the rest and said, "Please let us off taking baksheesh, as we are Forest Scouts, and what we have done will not count as a good deed if we take a tip. Please let us off and we shall be thankful."

Already they have proved themselves true to their



A GROUP OF THE FOREST GUIDES, WHO ARE ALSO NATIVE CHIEFS. CHIEF KINANJUI, THE PARAMOUNT CHIEF OF THE KIKUYU TRIBE, IS SEATED IN THE CENTER AND IS WEARING THE UNIFORM OF THE MEN OF THE TREES. THIS IS A GREEN BLANKET WITH WHITE BORDERS AND THE LETTERS "W. M." WHICH STAND FOR WATU WA MITI, THE NATIVE EQUIVALENT OF "THE MEN OF THE TREES"

promises in many ways, and today there are over three thousand members of the tribe wearing the same badge of membership, having taken the threefold promise, all belonging to the same brotherhood. Where one time tribes were suspicious of each other, today they exchange hospitality, for are they not all Forest Scouts? This movement, started in so small a way, is rapidly spreading and bids fair to become a power



THE FOREST NURSERY WHICH THEY STARTED AND WHICH ENABLES EACH SCOUT TO DO HIS "GOOD DEED EVERY DAY" BY PLANTING 50 TREES IN THE EVENING, IF HE HAS HAD NO OPPORTUNITY BEFORE. IN THIS NURSERY 80,000 YOUNG TREES HAVE BEEN RAISED VOLUNTARILY BY THE FOREST SCOUTS

for good among these primitive tribes.

Up till now the Forest Scout method of re-afforestation has only been applied in Kenya Colony, but those in authority are realizing that such methods are capable of a very broad application, and it may not be long before Forest Scout organizations are formed in other parts of Africa with variations adapted to local needs and conditions.

The Brittan Gift to the Shasta National Forest

BY MILLER HAMILTON

HIGH up in the foothills of Mount Shasta, on the headwaters of the Sacramento River, there is a 300-acre tract of mountainous, heavily timbered land that for sheer beauty of the kind made by massive old trees, flowering shrubs, and a sparkling lake cannot be successfully rivaled in all of California. For a fitting background, Mount Shasta looms up only 15 miles away and throws her snow-capped reflection in the mirror formed by Castle Lake.

It was this well-nigh perfect tract of virgin forest land that Hon. William Giles Brittan, of San Francisco, a distinguished member of California's legal profession and a judge of the Superior Court, selected as his place to

seek wholesome recreation, and for many years he and his family sought the Brittan Woods and Castle Lake each summer.

Judge Brittan passed away in 1915 and the ownership of the Brittan tract became vested in his sister, Mary Burt Brittan, of San Francisco, who very generously has given the land to the United States Forest Service as a memorial to her distinguished brother and as a recreational area for the public. This splendid gift was accepted a few

weeks ago by Secretary of Agriculture Wallace on behalf of the Federal Government, a special act of Congress having authorized Secretary Wallace's acceptance.

The Brittan tract lies within the Shasta National Forest and will now form a part of that forest. The Forest Service plans to develop the area to its highest recreational value, in order that the wishes of Miss Brittan, the donor, may be carried out to the fullest extent. Automobiles may reach the place via the Forest Ranger station at Sisson.

In thanking Miss Brittan for her gift, Secretary Wallace and officials of the Forest Service stated:

"In presenting this land to the United States, Miss Brittan

has done something that will be appreciated by the general public, both now and in the years to come. She had opportunities to sell this land at a high market value, but chose to dedicate it to public use instead. It is our hope that the Department of Agriculture, through the Forest Service, will at all times administer this tract so that it will accomplish the recreational purposes Miss Brittan has in mind and become a fitting memorial to her distinguished brother."



THIS MAGNIFICENT VIEW OF MOUNT SHASTA CAN BE HAD FROM THE SHORES OF CASTLE LAKE, A 45-ACRE BODY OF WATER INCLUDED IN THE BRITTAN GIFT TO THE SHASTA NATIONAL FOREST

A New Hickory from Florida

By GEORGE B. SUDWORTH

TWENTY-FIVE years ago only ten different species of hickories were then known. But a quarter of a century's careful study since then has brought to light approximately seventeen species, eighteen varieties, and seven hybrid forms of these peculiarly North American trees, which are distributed roughly throughout the eastern half of the United States and adjacent portions of eastern Canada and northern Mexico.

The hickories are uniquely distinct from other members of the family *Juglandaceæ*, both in the special type of compound leaves they have and in the character of their fruits, which are covered with a thick or thin husk that at maturity splits more or less completely into four valve-like divisions, at once liberating the hard-shelled nut or remaining attached to the latter for some time.

There is perhaps no better-known group of hardwoods than these trees, which nearly every one seems to know as hickories. Strangely enough, however, some New England people were, and perhaps still are, wont to call the fruits "walnuts," while the wood was known as hickory. Doubtless the delicious flavor of the nuts of several species and the unequalled physical quality of their woods for special purposes early brought the best hickories into prominence.

The hickories first to attract attention on account of their nuts and woods probably were the so-called "shagbarks" or "shellbarks." By a strange coincidence, both the fruit and the wood of these hickories combine the highest excellence among all of the other species. The one exception, with reference to the high quality of fruit, is the pecan, cultivated forms of which have reached very great commercial importance. The shaggy-barked hickories, of which there are two principal species, the ordinary shellbark and the big shellbark, or kingnut, are conspicuous trees in our central and northern hardwood forests. They are at once distinguished from all other hickories by the long strips of bark hanging from the trunks.

Roughly, the hickories form three rather distinct groups, comprising the shagbarks, pignuts, and bitternuts; but from what may be regarded as typical representatives of these groups are various gradations, seen in the character of the winter buds, bark, fruit, and foliage. Representatives of the shagbark group are characterized by their usually stout twigs, large scaly buds, thick husks of their fruit, angled nuts, shaggy bark, and a relatively small number of leaflets (usu-

ally five). With some exceptions, the group in which the pignuts and their allies fall usually have slender twigs, small scaly buds, only moderately thick husks, thick-shelled angled nuts, hard, deeply furrowed bark, and a larger number of leaflets (usually seven). They are a difficult group of hickories to compass. The so-called bittersnuts comprise a rather distinct group, characterized by their thin buds, composed of few valve-like scales, a large number of usually scythe-shaped leaflets (seven to nineteen), thin-shelled, sometimes bitter, nuts inclosed in thin husks, the sutures or dividing lines of which are marked with a winged or keel-like extension.

The enormous drain upon the shagbarks or better sorts of hickory woods for commercial purposes has gradually led to the use now of other species that thirty or forty years ago were rarely if ever used for commercial purposes. Wood of the shagbark hickories, now very difficult to obtain in quantity, is supplemented or replaced by supplies obtained from such formerly little-used species as the pignuts, bittersnut, white or mockernut, and, lastly, even by the pecan hickory, which is extensively used for the wheels of automobiles, as well for other wheelstock and agricultural implements.

Recently, a new member of the pignut group and related hickories was discovered by Mr. W. W. Ashe in western Florida (Walton, Okaloosa, Santa Rosa, and Escambia Counties), for which I am proposing the name *Hicoria ashei*, in honor of its discoverer. It is a tree sometimes attaining a height of sixty feet and a diameter of nearly two feet; usually, however, it is much smaller.



SHAGBARK HICKORY
(*Hicoria ovata*)

The firm, thinnish trunk bark of old trees is broken into a close network of shallow ridges and furrows. The slender, smooth, shining twigs of a season's growth ultimately become dark red or a bright red-brown, bearing oval-shaped, at first, acutely pointed, terminal winter buds, the smooth outer scales of which, soon falling, are strongly keeled, while the ashy gray inner bud scales are velvety. In early winter the buds become swelled and are then distinctly blunt at the end. They vary in length from slightly less to about half an inch. The frequently long-stemmed leaves are from about $9\frac{1}{2}$ to $16\frac{1}{2}$ inches in length and bear seven or nine, rarely five, lance-shaped, long-pointed, short-stemmed leaflets, which are from about $2\frac{3}{4}$ to $4\frac{1}{2}$ inches long. Rounded at the base, they are sharply and finely toothed, smooth on the upper surface and, with age, also on the lower side, except for small tufts of hairs in the angles of the veins. As they unfold, the leaflets are thickly covered on the lower surface with resin globules. The two-lobed stigmas are approximately one-tenth of an inch wide, each spreading, horn-shaped lobe being one-tenth to one-fifth of an inch long. The three-branched male flower clusters, $2\frac{3}{4}$ to $3\frac{1}{2}$ inches long, with thread-like bracts, longer than the calyx, bear long, simple, pale, red-brown hairs on the back and at the tip, while the three or four yellow antlers are densely set with long, simple hairs. The flowers appear during the last half of April (in the vicinity of Pensacola, the type locality). The obovate or nearly spherical fruit,

maturing during the last half of October, is $1\frac{1}{2}$ to $2\frac{1}{4}$ inches long and from $1\frac{1}{4}$ to $1\frac{3}{4}$ inches wide and often contracted at the base in the form of a short neck. A cross-section of the fruit is nearly or quite circular in outline. The husk is about one-tenth of an inch thick, is split to a point below the middle, or sometimes to the base of the fruit, liberating the dark brown, often angled, thick-shelled nut, which has a large sweet kernel.

Hicoria ashei was found associated with the red cedar (*Juniperus lucayana*), laurel oak (*Quercus laurifolia*), hackberry (*Celtis georgiana*), and shittimwood (*Bumelia lanuginosa*). It is more or less closely related to the pignuts (*Hicoria glabra* and *H. glabra megacarpa*) and to *H. ovalis*, from which it differs in its deeply divided horn-shaped stigmas and by its more numerous leaflets. In the case of the above-named related hickories, the lobes of the stigmas are hemispherical or nearly flat and none of them have more than seven leaflets. *Hicoria glabra megacarpa*, in the type locality (Rochester, New York), has only five leaflets. Moreover, the fruits of *H. ovalis* and *H. glabra* are decidedly flattened, while in section the fruit of *Hicoria ashei* is nearly or quite circular.

Of all the species of hickories now known to grow naturally within the United States, nearly one-third of them are found in the State of Florida. But this is perhaps not surprising, in view of the fact that Florida has represented within its borders a larger number of different forest trees than any other state in the Union.



PIGNUT HICKORY
(*Hicoria glabra*)

"We Can Never Have Enough of Nature"

"Our village life would stagnate if it were not for the unexplored forests and meadows which surround it. We need the tonic of wildness—to wade sometimes in marshes where the bittern and the meadow-hen lurk and hear the booming of the snipe; to smell the whispering sedge where only some wilder and more solitary fowl builds her nest and the mink crawls with its belly close to the ground. At the same time that we are earnest to explore and learn all things, we require that all things be mysterious and unexplorable; that land and sea be infinitely wild, unsurveyed and unfathomed by us because unfathomable. We can never have enough of Nature. We must be refreshed by the sight of inexhaustible vigor, vast and Titanic features, the seacoast with its wrecks, the wilderness with its living and its decaying trees, the thunder cloud, and the rain which lasts three weeks and produces freshets. We need to witness our own limits transgressed, and some life pasturing freely where we never wander."—Thoreau ("Walden")

Broadwater's Discovery

By J. A. COPE

FIFTEEN years ago a man crossed some wild land of Garrett County, Maryland. He was a local farmer taking a short cut from a near-by town to his home. As he crossed one particular field, it came into his mind that that tract of land had undergone a terrible change. Great stumps punctuated the surface of the field and recalled a picture of magnificent sugar maples which a few years before had formed one of the most productive sugar orchards in all of Garrett County. The owner, thinking to make a little "speedy" money, had sold his trees for lumber, and his sugar orchard was now a thing of the past.

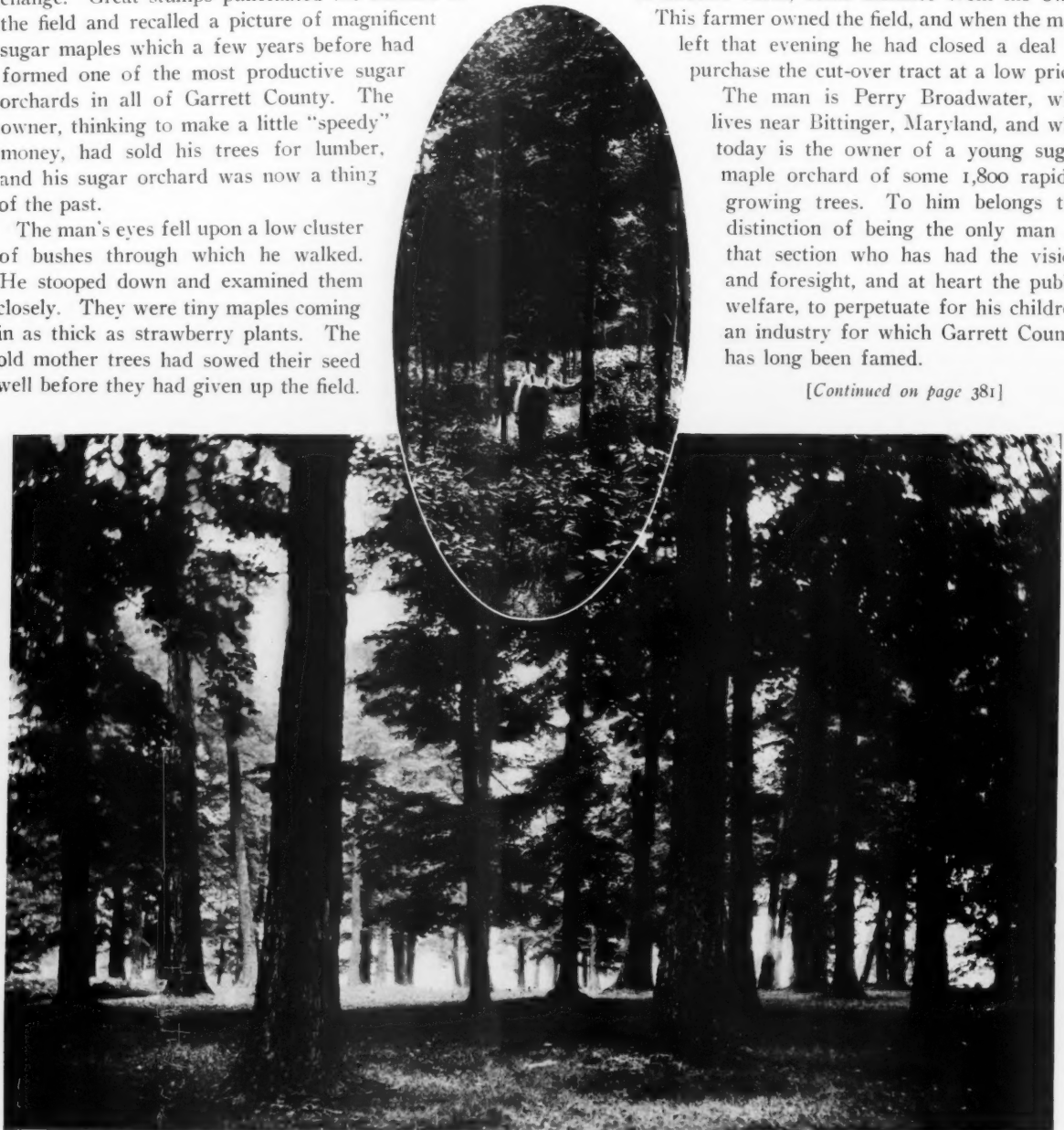
The man's eyes fell upon a low cluster of bushes through which he walked. He stooped down and examined them closely. They were tiny maples coming in as thick as strawberry plants. The old mother trees had sowed their seed well before they had given up the field.

The vigor with which the young maples were growing fairly made the man exclaim, "Why, there will be another maple orchard here when my children grow up if these trees are taken care of." Instead of going directly home, as was his intention, the man turned and made his way to another farm, some distance from his own.

This farmer owned the field, and when the man left that evening he had closed a deal to purchase the cut-over tract at a low price.

The man is Perry Broadwater, who lives near Bittinger, Maryland, and who today is the owner of a young sugar maple orchard of some 1,800 rapidly growing trees. To him belongs the distinction of being the only man in that section who has had the vision and foresight, and at heart the public welfare, to perpetuate for his children an industry for which Garrett County has long been famed.

[Continued on page 381]



Photographs by F. W. Besley

A "GROWN-UP" SUGAR ORCHARD IN MARYLAND. THE CUTTING OF THESE GROVES LED TO "BROADWATER'S DISCOVERY." THE INSET SHOWS MR. BROADWATER STANDING IN HIS GROVE OF YOUNG MAPLES, WHICH PROTECTION AND CARE HAVE DEVELOPED FROM BABY SEEDLINGS INTO EIGHTEEN HUNDRED WELL-SPACED, HEALTHY-CROWNED TREES, A SUBSTANTIAL HERITAGE FOR HIS CHILDREN

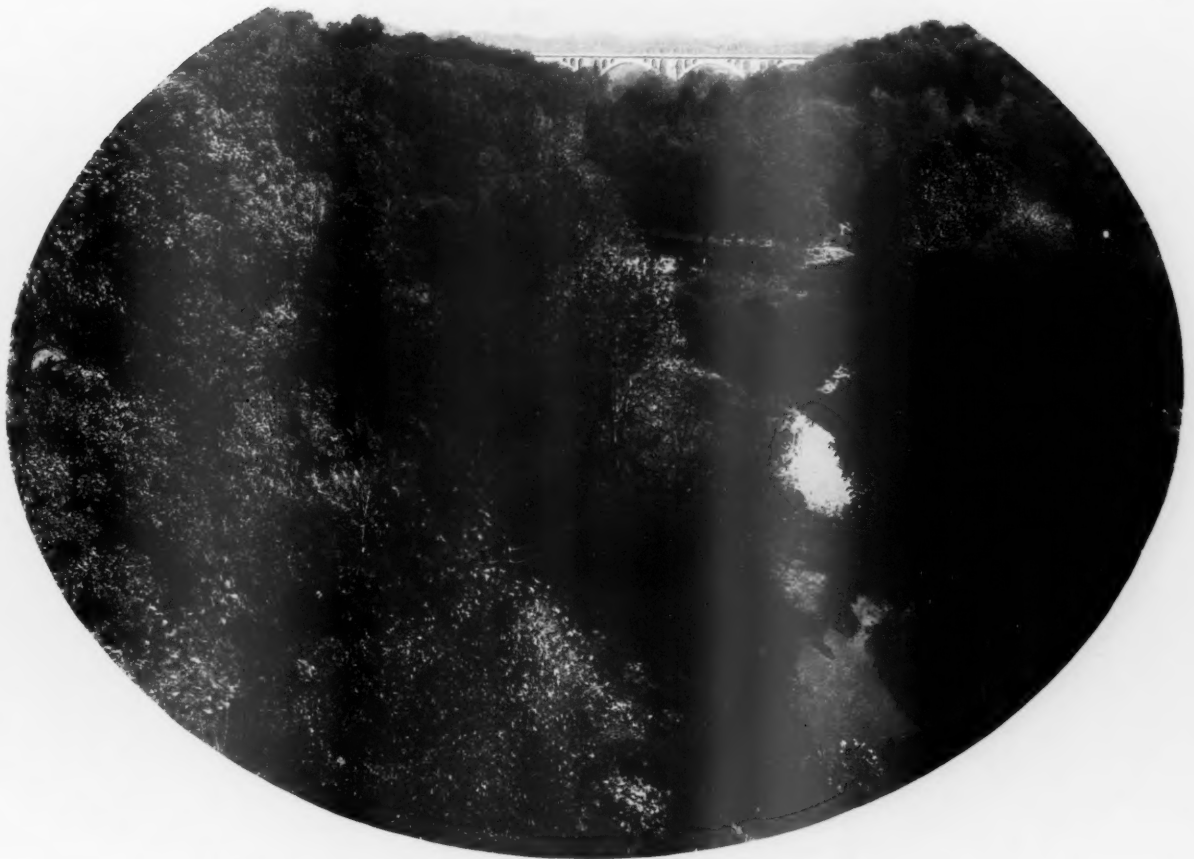
A PLAYGROUND AS GOD MADE IT

BY EARL GODWIN

THERE is a forest in a gorgeous valley, just as it was created, standing in the middle of the nation's capital. Be it said to the glory of man that this forest belongs to you and to me and to our children. It is two and a half square miles of woodland, hill, dale, and splashing stream, without its equal in any other city in the world, for God made it a wooded land, and by the best of luck no landscape gardener has tried to improve upon it.

It is Rock Creek Park, bought and maintained by the United States Government. It should be the best-known park in the world, and undoubtedly will be some day. It is safe to say that during the course of a year it is visited and enjoyed by more people from more cities, towns, and villages throughout the nation than any other wooded tract in North America. Moreover, it is an outstanding example of how to preserve for municipal recreation the best that Nature has given us; for its hills are clothed with stately trees, many of them remnants of that primeval forest which witnessed the first coming of the white man—impressive and characterful oaks and elms, maples, chestnuts and hickories, and all that goodly company of trees native to our Eastern mountain slopes.

Had it not been for wise forefathers, that wondrous Rock Creek Valley would have been



Looking Down Through the Lovely Valley of Rock Creek Toward the Million-dollar Bridge—Tree-covered Hillsides Reflected in the Quiet Waters



© C. O. Buckingham

Miles of Softly Shaded Roads, Following the Natural Curve of the Stream, Are Available for the Use of the Motorist

ripped and cut and besmeared by builders, sanitary engineers, and real-estate gamblers. As it is, one of the gems of creation was saved for us and made an integral part of the nation's capital for all time.

Rock Creek Park is the hillside, stream, woods, and meadows just as they left the hands of the Creator, except that army engineers have built roads along the natural curve of the stream and have protected its banks, where necessary, with low retaining walls; they have cleared out ugly underbrush and have built a shelter here and there.

Rock Creek itself is not more than twenty miles long. It starts in a trickle of water on a Montgomery County farm, in Maryland. It is a slender thread until it nears the boundary between Maryland and the District of Columbia, and there it takes on a character which makes well worth while spending many hours along its winding

course. High and steep hills have been worn down by this persistent little stream, leaving interesting scenery, with the most startling changes from placid pools to leaping cascades. The hillsides challenge the endurance of any pedestrian, and to make the challenge more alluring footpaths have been cut up and down the stream. These, together with the long, winding bridle paths, are reminders of President Roosevelt, who ordered them established and who used them constantly. It was over many of these paths that Roosevelt while President would lead fat and puffy, desk-ridden army officers the chase of their lives.

Probably Rock Creek should have an Indian name, for in an old act of Congress it is actually called the Conococheque. Of all the watercourses in the country, this stream has the most temperamental moods for its short career, from its source to its mouth in the Potomac River. It wanders through farm land with little to do except furnish a place for children to catch minnows and fat, round, little sunfish; then it burrows into the hard, rocky ledge which is the geological mark of separation between tidewater country and the eastern slope of the mountain system. A temperamental little stream, indeed, subject to a thousand moods—now bubbling with laughter, then rushing angrily over some rocky obstacle in its path, and again flowing gently into widening pools beneath the deep shade of its tree-bordered way; then spreading out in a shallow ford, so that children can splash and wade through without danger. To the everlasting glory of the army engineers who have charge, these pools and wading places have

been made safe without changing the character of the water in any way. The suffocating art of the concrete tank man has not been called upon.

Two angry little streams pour into Rock Creek. They, too, should have names redolent of the poetry of the glens; but, called by local pioneers Piney Branch and Broad Branch, these names will doubtless cling for all time. The first stream is scarcely "Piney" any more, as the pines, if they ever existed on the banks, have been cut and the city is growing up along most of its way. Broad Branch is about broad enough to jump over at any point, but the estuaries of these two brooks form very beautiful spots in the park.

A trout fisherman would find a haven of glorious angling in



Courtesy of the Evening Star

A Rustic Bridge Invites a Moment's Pause



© C. O. Buckingham

A Placid Pool, Shaded by Old Trees, in the Deep Woods—Yet It Is Just a Stone's Throw from a Well-worn Footpath to This Enchanted Spot

Rock Creek, were there any trout. It is water which seems longing for the caress of a bright-colored fly, but trout cannot live therein, as the water reaches too high a temperature in summer. Old-timers say that herring used to be caught at Georgetown, near the mouth of the stream, and there is an occasional dark and mysterious reference to bass taken in a mysterious hole in the Creek—a place known only to youngsters. Here's hoping no grown-up ever discovers the secret, unless he be worthy and one who loves and appreciates the favors granted by stream and woodland.



© C. O. Buckingham

Winding Roads Lead Down Through This Glen of Beauty to the Ford, Where Hundreds of Cars Cross the Creek Each Day

All Washington can play and breathe in this great park, which, by the way, is the second largest of its kind in America and larger than most parks in Europe. It is accessible, reached easily by street-car and bus lines. It has miles upon miles of splendid, tree-shaded automobile roads and pathways for walking or horseback riding. The swimming holes are in the deep woods. Just imagine *that!* Within a few minutes a Washington "kid" can slide into a deep, dark pool, utterly lost from civilization, surrounded by trees that were old when Columbus



Courtesy of the Evening Star

A Shallow Place, Where Little Ones May Wade and Splash to Their Hearts' Content

landed. Laugh that off when boasting about your "gym" tank!

There is a meadow near one of the entrances to the park where boys sometimes play football, and in that meadow stands a group of copper-beech trees which alone would constitute a treasure for any city or any vast estate. There are song birds without number, for Rock Creek lies in a cradle where



Where the Low Road and the High Road Meet, Near Piney Branch, in the Park



Artistic Stone Bridges Span the
Laughing Little Stream

there are more different kinds of birds than anywhere else in America—and the Biological Survey is authority for that statement. There are hundreds of places for all-day camping, picnics, and outdoor dancing, all arranged without distorting the natural beauty of the woods and fields.

In the upper part of the park there is a rumbling cascade, where the water drops ninety feet in ninety rods. The first white man to see this was Captain John Smith, the redoubtable, who charted it, along with the stream, in the maps of the new possessions he was describing for England. The adventurous Smith found three tribes of Indians living around the stream—the Anacostans, the Monocans, and Pottowatomies—and the names of the first two are preserved in Anacostia, which is a portion of Washington, and in the Monocacy River, which flows into the Potomac River near Frederick, Maryland.

For at least two hundred years the beauty of the valley of Rock Creek has been the subject of song and story. Old, fulsome, poetic writers of the fifties sang its praise and wondered why some great college was not reared upon its banks. The sentiment of today is well represented and expressed in the fine words of Viscount James Bryce, Ambassador from Great Britain to the United States. He says, in an article written several years ago in the *National Geographic Magazine*:

"What city in the world is there where a man . . . can within a quarter of an hour and on his own feet get in a beautiful rocky glen such as you would find in the woods of Maine or Scotland—a winding, rocky glen, with a broad stream foaming over its stony bed; and wild leafy woods looking down on each side, where you not

only have a carriage road at the bottom, but an inexhaustible variety of footpaths; where you can force your way through thickets and test your physical ability in scaling the faces of bold cliffs."

Only destiny saved Rock Creek for the people. Below the park, and near the mouth of the stream, the banks are mere dumps—huge, hideous heaps of ashes—although the ultimate plan, thank fortune, is to reclaim the entire stream for park purposes. In the old days, hard-boiled sanitary engineers predicted that "unless something were done about it" they would "have to make the creek a walled sewer, as it is a natural drain for the surrounding country." Nearly sixty years ago army engineers began to



© C. O. Buckingham

A Happy Group Along the Bridle Path—The Park is
a Mecca for Those Who Love to Ride

[Continued on page 346]

How Bartlett Kept The Home Fires Burning

By CHARLES E. BEALS, JR.

TO RECALL to mind the "worst coal year in history," which closed not so long ago, will not be at all difficult for the average American householder. It will be more of a test to recall those frantic struggles to keep the mercury from dropping through the bottom of the glass tube in the living room without kicking the dog or bursting into language aflame. But here's hoping that the scars of the battle have been sufficiently healed by the May sunshine to permit a perusal of the story of a more fortunate neighbor without any feeling that it adds insult to injury.

Nestling in a picturesque New Hampshire valley, almost completely surrounded by lordly mountains and but a short way from Crawford Notch, is the village of Bartlett. In a dozen ways Bartlett might be any one of a great many interesting, sightly, and lovable New England communities; but, because Bartlett has de-throned King Coal and won a new freedom from the tyranny of fuel shortages and fuel profiteering, her position is one of unusual interest—one, in fact, to be envied.

Of Bartlett's 125 families, perhaps 100 are those of railroad men. Their work had always seemed to pretty well fill their lives, and, in common with most of us, they looked to others to supply food, shelter, fuel, and the other essentials of modern life.

The autumn of 1917 brought a severe fuel shortage. Coal was not to be had at any price. The limited available supply of green wood was bringing \$16 a cord on the local market. Bartlett was soon thoroughly aroused, and once alive to the seriousness of the situation, as well as to the possibilities hitherto overlooked, the community went after its fuel problem in a fashion which left no room for doubt as to the final result.

South of Bartlett the White Mountain National Forest

extends to within a half mile of the post-office. From this boundary a gently sloping, fan-shaped plain, known as the Bartlett Brook Watershed, gradually rises to the foot of the mountains about three miles from the village. This forested slope the Federal Government was eager to improve as a forest property by selling the mature timber; but the mere fact of plentiful wood supplies near an apparent market does not mean cheap fuel or an opportunity to practice intensive forestry until forces operate to develop and organize the apparent market. These forces operated in Bartlett.

The watershed was carefully estimated by the local forest officers and divided into 13 blocks, each measuring

about one-half mile square. These 13 blocks were designated as the Bartlett Fuel Area and the game was on.

Actual experience shows that the mature timber in a single block suffices to meet the fuel demand of the community for more than three years. At the present rate of consumption, therefore, the present stand of timber on the Fuel Area of thirteen blocks will supply the village with

wood for forty years. By that time, cutting can begin again, and the rotation thus can go on indefinitely. Moreover, with each rotation the trees will grow straighter and the production will increase.

In making sales, all mature yellow birch, beech, and maple trees ten inches in diameter four and one-half feet from the ground (*i. e.*, breast high) and all defective trees are marked for cutting. Each tree to be cut is blazed and stamped "U. S." once at the height of the breast and again on the stump, at the swell of the root. The initials of the purchaser are written on the upper blaze. This system of initialing does away with any possibility of confusion between the purchasers as to ownership of certain trees.



THE FUEL AREA AFTER CUTTING

In the first year the area cut was about 100 acres and it yielded a total of over 1,250 cords, which decidedly relieved the fuel situation in the town.



CUTTING THE WIDOW'S WOOD

The purchase, cutting, splitting, and hauling of sixteen cords of wood for a widow with three children indicates the neighborly spirit with which the people of Bartlett became imbued.

Whenever possible, the trees are marked for individual purchasers on the "round-turn" plan—that is, by making a circular or semicircular road among the marked trees all the wood when cut may be loaded without the necessity of turning around.

In cutting, stumps must not exceed twelve inches in height and the trees must be utilized up to a diameter of two inches at the top. Bartlett's usual snowfall, which packs down to four feet on the level, sometimes makes it difficult to keep the stumps within the prescribed limit of twelve inches, but in almost every case a conscientious effort is made to live up to the agreement. No complaint can be made concerning waste, for some of the choppers keep on working up the tree just as long as they can cut from it a stick four feet long. The brush is not piled in windrows, but lopped and scattered over the ground. It then decays so rapidly that within a year or two a person can walk through the cut-over area without the brush seriously impeding him.

The stumpage price when the Fuel Area was first opened up was \$1.00 a cord. Gradually the price has advanced to \$1.50 a cord, the present price. Even at this increased figure more wood is sold than when the price was \$1.00. The cost of a cord of fuelwood today in Bartlett is: Stumpage, \$1.50; cutting, \$3.50; hauling, \$2.00; total, \$7.00. Remember, the price was \$16.00 before this plan was adopted.

The area cut over during the

first two years (1917-1918) was about 100 acres and the material removed totaled over 1,250 cords. Up to the present time, the cut-over area does not exceed 300 acres and the annual cut has been between 600 and 800 cords. This increased productivity per acre partly is accounted for by the fact that the growth now being cut is heavier than the growth where operations started. At first the average was about five trees to a cord, while three trees now suffice. Another reason for the increased yield is that additional cuttings are being made among maple clumps and gray birch to liberate more valuable trees. Thus, by culling more closely and leaving only the best, the

yield is about 30 cords to the acre instead of 12.

In the northeastern corner of the Fuel Area there was originally a dense stand of gray birch. This species grows to only about six inches in diameter and then dies. It grows rapidly and sprouts vigorously. Its average life is from 20 to 25 years. It is easy to chop and work up and makes excellent fuel. When this wood was offered at \$1.00 a cord, it went like hot cakes. From twenty acres 250 cords were sold. The despised gray birch thus has come to have a value as fuel. And since, in twenty years, an acre will grow a dozen cords, it would seem that it pays to raise gray birch. But, if one does not wish to devote his land to gray birch, experience shows that it pays to cut it, since by so doing one liberates the paper birch and poplar and hastens their growth.



CUT AND STACKED ON THE "ROUND TURN" PLAN

By making a circular or semicircular road among the marked trees, the wood may be loaded after cutting without the necessity of turning around.

From the very first, the citizens of Bartlett have been enthusiastic over the opportunity to cut their own wood. With the opening of the Fuel Area, wood chopping became fashionable. It was an absorbing topic of conversation. Frequently thirty or forty men may be seen at one time chopping their winter's wood. At noon the women bring hot dinners and boil coffee in some sheltered spot, while the men gather in groups like picnickers, and a wholesome laugh goes around. In the beginning few customers ever had cut down trees before and no little fun was enjoyed in guessing in which direction a tree would fall; but the experienced choppers soon initiated the novices into the mysteries of axmanship, so that the trees now fall where intended.

The lesson of co-operation is learned on the Bartlett Fuel Area. Each year the local Odd Fellows devote a day to cutting fuel for their hall. "Many hands make light work," and everybody has a good time. On January 8, 1922, twenty-seven men, with three teams, went to a designated lot in the Fuel Area and cut and hauled fifteen cords to the home of a retired railroad man, now almost totally blind and for years unable to work. He was taken completely by surprise and was overwhelmed by the gift. Just a week later thirty-nine men, with six teams, cut and hauled six-

teen cords to the home of a widow with three small children. Needless to say, this was a most welcome surprise. Nor did the donors consider that their work was done until the wood had been sawed into stove length, split, and

packed into shed or cellar. When it is remembered that these men went into their pockets to buy the stumpage and furnished labor and teams free, one is able to appreciate the socializing effect of such co-operative relief work.

The Bartlett Fuel Area is giving a high grade of service to the community, and this service is deeply appreciated; also, the old-growth hardwoods, which were regarded as worthless by the lumbermen of yesterday, are now being disposed of, limbs and all, at a fair figure. Instead of these trees being allowed to decay, they are put to practical use. The removal of these trees improves the stand, allowing light and moisture to reach the small, straight trees. The next crop will be better than the first. Thus, besides practicing intensive silviculture and securing unusually close utilization, the Bartlett Fuel



ANOTHER VIEW IN THE CUT-OVER AREA

This shows the advanced growth of both hardwoods and softwoods, following the careful cutting methods employed in the Bartlett area.

Area is furnishing that which every community should enjoy—an opportunity to cut its own firewood. And incidentally, while chopping firewood, the men of Bartlett seem to have discovered and applied the principle of human brotherhood.

Radio Put to a Good Use

From District 7, in the East, comes the following note:

Up near the crest of the Ozarks, a long way from anywhere, lives Ranger Jim Mason, with his healthy, happy family. With almost no opportunity to get out into the main stream of rushing modern life, it was natural that Jim should dig up a nice chunk of the family treasure and install a big 3-tube radio a year or so ago. It brought a lot of interest, education, and entertainment to the hills; made life much brighter and more generally worth while. After a month or two of grand opera, oratory, and jazz, Ranger Jim wondered why the air never talked forestry. So he sent to WOS at Jefferson City, Missouri, a copy of Government Forest Work, with the suggestion "Why not broadcast some of this, particularly the parts devoted to fire

protection?" WOS fell hard. They broadcast the entire book, to the delight of Mrs. Mason, poor old Jim being out late that night on the trail of some timber thieves.

Missouri is a State in which forest conservation and the prospect of a new National Forest are live issues. Did Mason's stunt help? Well, it surely didn't do any harm. And then, on March 26, the radio programs in the Washington *Star* carried this item:

"WOS, Jefferson City, Mo., 9 p. m.—Address, Forest Protection Week and Arbor Day, by H. F. Major."

It is not known for sure that Mason put this over, but we choose to believe that he did until we hear to the contrary. Is your forest "in the air"?



THE UNIQUE APPEARANCE OF A PAPER-MULCHED PINEAPPLE FIELD AT WAIALEE, OAHU, HAWAIIAN ISLANDS

PAPER MULCH

"Putting One Over" on the Weeds in the Hawaiian Pineapple Fields

By C. S. JUDD

Superintendent of Forestry, Territory of Hawaii

WHAT have we here—a burying ground in France? Far from it. It is a picture of a peaceful pineapple field on the land of Waialeale, Island of Oahu, which shows the latest and approved method of growing this delectable fruit in the Hawaiian Islands. This is the case of another use for paper and opens up an entirely new market, promising great expansion in the use of asphalted papers.

Visitors to Hawaii in traveling through the foothills of the islands, which comprise the pineapple-raising section, now see a landscape accentuated by rows upon rows of this asphalted paper mulch, which shows up white in the sunlight because it is dusted with talc to prevent its adhering to the rolls. It is estimated that there are now over 10,000 acres in Hawaii under paper mulch, and it is applied in practically all new pineapple plantings, because its use more than repays its cost.

The practice of using this mulch on planted rows first developed from a "mistake," and this important practical and scientific discovery of paper mulch and the method of application are now protected by international patents under the trade-mark "Thermo-Gen."

The "mistake" occurred in connection with sugar-cane cultivation, when unskilled laborers laid the paper mulch on the cane rows instead of between them, as instructed, to keep down the smothering growth of wandering Jew and other weeds which had invaded cultivated fields in the wet Olaa District.

The idea of mulching the planted row was quickly grasped by Mr. C. F. Eckart, who has patented it. The Hawaiian rights to its use have been acquired by the Hawaiian Pineapple Company, and on the mainland the rights have been sold to paper manufacturers, who sell heavy felts and asphalted building papers.

The better the quality of the paper, the more asphalt it will take and the longer it will last in the field. The best quality of rag paper will absorb 100 per cent of asphalt. Paper made of 40 per cent and more of rags is considered to be of good quality. Where there is less than 40 per cent of rags and the balance is wood pulp, the absorption of asphalt is poor, the coating on the outside blisters, the asphalt dries out, and the paper goes to pieces. A working remnant of the best quality of paper mulch has been found after four or five years, or until the second

ratoon crop of pineapples has been harvested. This heavy paper costs from \$78 to \$102 per acre. Usually the strips, which are 36 inches wide, are laid so that the medial line of one strip is 6.5 feet from the medial line of the next, the open space between strips being 3.5 feet.

When using this mulch, the land is first thoroughly prepared and put into the best of tilth for planting. The beds receive a dressing of fertilizer and a sled is drawn along them to smooth the surface and work the fertilizer into the soil. The sled is constructed so as to shape the crown of the bed without pressing the soil. On level ground this operation is combined with the laying of the paper. A patented machine, which consists of a drag-sled which carries a roll of mulching paper, pulverizes the soil and forms the bed; a flanged roller that is attached to the rear of the sled shapes the paper as it is paid out over the bed and turns its edges into the furrows made by the sled runners; and shovels or disks just behind the flanged ends of the roller serve to throw the soil against and over the edges of the paper to hold it permanently in place.

The beds are then ready for planting. Holes are made through the paper with a rounded stick, which also presses into the bed, and the pineapple slips are then inserted through the holes. The plants are set out in double rows, along lines approximately six inches from the edge of the paper, so that the two rows in the one strip are about 24 inches apart. In each row the plants are 18 inches apart and staggered with those of neighboring rows.

This paper mulch does away entirely with the costly

hand labor in weeding the rows, for no weeds can come up through the paper, while the most thorough inter-row cultivation with a horse-drawn implement is permitted. There is a saving in weeding of 60 per cent by the use of paper mulch. The beds are protected against the compacting action of rains and other weathering influences. The mulch conserves the moisture and, as water is the great solvent for plant food, the plants under these conditions naturally absorb more food materials and develop faster. The root systems of plants under paper mulch grow to twice the weight and size of those which are unmulched. In many instances paper-mulched pineapple plants set out three months after the adjoining unmulched field average a foot taller. Results of an exhaustive experiment carried on for three years, during the run of one plant and one ratoon crop, show that not only is the size and weight of the fruit increased, but the yield per acre of the combined crops is increased by over nine tons of fruit and is almost 40 per cent greater when paper mulch is used.

Mulching paper is successful where there is not too much moisture, and pineapples grow the best, anyway, where semi-arid conditions are approached. The mulch works out less advantageously where the rainfall is excessive.

A few experiments have lately been started in Honolulu in which paper mulch has been placed on the ground around the stems of fruit and forest trees in a region of excessive weed growth, but it is too early as yet to present any comparative results.

A Playground As God Made It

[Continued from page 341]

figure on the valley as a park, and from 1870 to 1890 the matter was kept alive in Congress by far-seeing statesmen. They had considerable opposition. The *Congressional Record* has perpetuated the debates on the subject of a park in that wonderful little valley, and one high light in the opposition is the comment of a member of the House from Mississippi, who in 1888 spoke against the project. Inasmuch as it had been planned to house "wild animals" in one end of the proposed park, he upraised his voice to protest against the government going into the "show business" at a point so far removed from his voters!

Opposition melted away, and in 1890 the government bought the valley from various private owners for \$1,175,500. More than real estate was purchased, as the true worth of the thing cannot be measured in money. Nor is it only beauty that has been perpetuated, for the valley has a great history. John Quincy Adams had a mill on its banks; John Howard Payne, who loved the glen and stream, lies buried on a high bank above the creek. An old stone mill, in wonderful preservation, built by Isaac Pierce more than a century back, is now a part of the park and will always remain as a landmark. Above the Pierce mill was Blagden's paper mill, and the Blagden

property for years was the country estate of Count Bodisco, for a long time Russian Minister to this country.

Few know it, but Robert Fulton's first steamboat experiments were carried on with models in the waters of this streamlet. Fulton was a friend of Joel Barlow, United States Minister to France, and when Barlow returned to this country to live on Kalorama Heights, a high point on the banks of the stream, Fulton spent much time with him. That he tried out his models and did other work on his ideas in Rock Creek waters is well known to historians, although there is some question as to just where his experimenting was done.

Although it took our government a great many years to make up its mind to buy and maintain this great park, today there is nothing which has better care from Congress. The wisdom, the foresight of thirty years ago is recognized, of course, and the man who would hesitate to vote for appropriations for the upkeep of the park today would be looked upon as an unworthy lawmaker. Furthermore, Congress is committed to a plan to link Rock Creek Park with other available tracts in and around the city of Washington, and is working slowly on an encircling park system which will for all time ring the capital city with a girdle of greatest beauty.

BLACK WALNUT

Where and How to Plant It

By W. R. MATTOON

BLACK WALNUT is one of our most valuable forest trees. It is easily propagated from the nuts, makes a moderately rapid growth under favorable conditions, and is a long-lived tree. Many farms have become nearly depleted of black walnut timber and should be restocked by planting. Farms and home yards containing a goodly number of black walnut trees are thereby enhanced in value over those with idle lands or only inferior kinds of forest trees. The wood possesses many points of excellence, fitting it for a wide range of uses. The nuts furnish a valuable food and the tree is effective for ornamental purposes.

The wood is heavy, hard, strong, chocolate brown in color, and very durable in contact with the soil. It takes a high polish and is in great demand for furniture, gunstocks, automobile steering wheels, and other uses. The largest demand is for logs, 16 inches and up in diameter, for manufacturing into veneer. The growing of black walnut is considered practicable on farms and in yards

over a large part of the United States east of the Great Plains.

Black walnut thrives only on very good, deep, fresh, well-drained, clayey, or loamy soils. It is unsuited for planting on very sandy, gravelly, poorly drained, or thin soils. It forms a deep, large taproot, and thrives best where this reaches a continuous supply of moisture. Since good agricultural soil is necessary and profits are likely to be larger from field crops, it is not generally advisable to plant black walnut on tracts of large areas. Walnut trees grown individually and in small groups produce merchantable logs and crops of nuts much earlier than trees in crowded plantations and also permit of pasturage. Black walnut may be profitably planted in unused places about the farm. Rough or hilly lands, where the soil is good, but otherwise poorly adapted to successful agriculture; also, large fence corners, fence rows, hollows, ravines, stream banks, and deep pockets among rocky outcroppings in fields often afford excellent



Courtesy The American Lumberman

A PARTICULARLY VALUABLE BUTT LOG OF BLACK WALNUT GROWN IN VIRGINIA AND SHIPPED BY WATER TO A VENEER PLANT IN BROOKLYN, NEW YORK. THE STUMP WOOD FURNISHES THE FANTASTIC AND BEAUTIFUL FIGURED GRAIN, SO MUCH IN DEMAND FOR FINE CABINET WORK

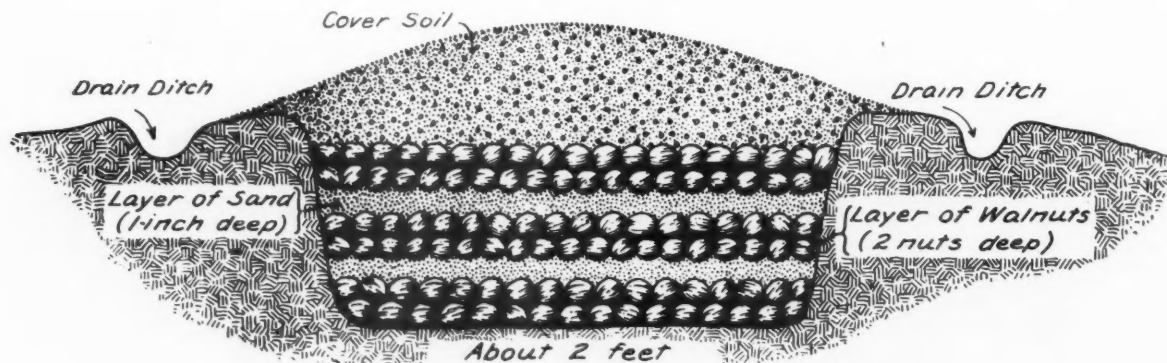


A ROADSIDE LINE OF BLACK WALNUTS IN THE "BLACK BELT" OF CENTRAL ALABAMA, A REGION SADLY IN NEED OF BOTH TIMBER AND TREES. THE WALNUT IS WELL ADAPTED TO THIS METHOD OF DISTRIBUTION ABOUT THE FARM, WHERE IT PRODUCES A DUAL CROP OF TIMBER AND NUTS

places for planting black walnut. It may also be planted about the farm home as shade trees. In such locations nut trees are especially appreciated and profitable.

A number of native black walnut trees have been discovered whose nuts possess superior cracking qualities. By means of scions or buds from the original trees, these are being propagated in greater numbers each year, since the value of the nut crop is thereby greatly enhanced and the timber is of the same high quality as that of other walnut trees. Stocks of these selected trees are available in limited numbers from the owners and make possible the

or stratified in sand in a pit. When the weather warms up in the spring, the nuts should be examined and those which have sprouted can be set out much as a gardener would plant cabbage plants in well-prepared spots in the field. The sprouted nuts need to be handled carefully to prevent breakage of the root tips. They may be set out 8 to 10 feet apart in the field, which will require 450 to 700 sprouted nuts per acre. On land which is suitable for cultivation, it will ordinarily do no harm to grow field crops between the rows of trees for the first few years. Trees planted individually about the farm should be kept



growing of valuable nut trees about the home or in nut orchards.

Throughout the entire Middle West, south of central Michigan and Wisconsin, planting should be reasonably successful on all fertile land, and especially in coves, valleys, and bottom lands, where there is requisite moist-

clear of weeds or brush. In planting for the commercial production of timber, enough trees should be set out so that when large enough to sell the owners will be able to offer a buyer at least one carload. The sale can then more easily be made and with greater profit.

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ure and partial protection from the wind. The most favorable range for economic planting is in the fertile valleys of the Ohio and Mississippi rivers and their tributaries and on the bottom lands of Pennsylvania, Maryland, Virginia, the Carolinas, Georgia, Tennessee, Kentucky, Missouri, eastern Nebraska and Kansas, and Oklahoma. On upland soils, especially in the West, where there is a stiff subsoil, the tree makes slow growth. In the southwestern plains the dry, hot weather of summer is often injurious, while in Minnesota and the Dakotas the cold of winter often kills back the season's shoots.

A good way to start a black-walnut plantation is by planting sprouted nuts in the spring. To prepare the nuts for planting, in the autumn they should be

stored in a cellar, ground cave,

The Forest Policy of New York

BY RALPH S. HOSMER

Professor of Forestry, Cornell University

NEW YORK was the first state in the Union to inaugurate a definite program of forestry. It seems now to be one of the states where it is most difficult to develop a really comprehensive, state-wide forest policy adequate to meet the needs of the present day. As an example of the obstacles that line the path of constructive forest legislation, the record of the session of the New York State Legislature that has just closed is instructive. Although several proposals having to do with an expansion of the state's forest policy were actively before the Senate Committee on Conservation, none of them reached a point of definite action. As far as actual accomplishment goes, all that can be said is: "Another year lost."

It is, however, of interest to note a contribution to the forest-policy discussion that the foresters of New York have made this past winter, in that while it failed to receive attention this year it is likely to play a part in subsequent efforts to bring about the rational use of all the forest lands of New York State. A summary of the recommendations made by the foresters is given later.

To make clear the relation that this proposal of the foresters has to the existing situation in New York, it should be recalled that in various provisions of the Conservation Law that have been enacted over a period of years, New York has already gone a good way in satisfactory forest legislation. And this notwithstanding the clause in the State Constitution (Article VII, section 7) which provides that the state-owned forest lands constituting the Forest Preserve in the Adirondacks and the Catskills "shall be forever kept as wild forest lands," on which no trees shall be cut, destroyed, or removed. In the minds of foresters, this inhibition of wise use is the antithesis of sound forestry.

Under the Conservation Law, as well as under other auspices in the state, much excellent work has been and is now being done in forestry in New York; but to make it possible to attack the forest problems of New York in a truly efficient manner requires that the forest policy of the state shall be expanded and developed.

The foresters of New York have for years been keenly alive to this situation, and especially through their professional body, the New York Section of the Society of American Foresters, have been active in the support of measures designed to broaden the scope and make effective in practice the forest policy of the state. When, therefore, at the time of the annual meeting of the New York Section, on February 6, 1924, State Senator Ellwood M. Rabenold, chairman of the Senate Committee on Conservation, asked the foresters to submit to him recommendations regarding a forest policy for the state, the Section gladly acceded to his request. A special

committee was at once set up, with power to draft such recommendations. This it did, and on February 16, 1924, there was sent to Senator Rabenold, accompanied by drafts of four proposed bills, what the committee felt to be a series of specific and tangible suggestions leading, with existing laws, toward the creation of a comprehensive state-wide policy for the State of New York.

In the following summary are given the essentials of the nine points covered by the committee's report. It was recommended that six of these should be incorporated in the Conservation Law. For the other three the need is for better financial provision than is made at present.

In expansion of the existing legislation contained in the Conservation Law, as amended to the close of the legislative session of 1923, there is needed additional legislation that shall incorporate or provide financial support for the following specific points:

1. The organization of the Conservation Commission shall be so altered, by amending the Conservation Law, as to put the Conservation Commission under strictly non-political control. To effect this, the committee recommends that there shall be created a non-partisan Conservation Board, which shall appoint the Conservation Commissioner and advise and assist him in carrying out the duties prescribed by law.

2. The Conservation Board shall be granted the power to draw up rules and regulations necessary to keep the forest lands of the state productive. Under this authority the board shall consider one of its prime obligations to be the creation of conditions which shall make the practice of forestry by the private owner both desirable and profitable. Under this provision the Conservation Board would be empowered to enact rules governing the preparation of working plans designed to regulate the cut so as to secure continuous forest production on both publicly and privately owned forest land.

3. The extension of the forest-fire prevention system so that it shall be state-wide.

4. The adoption by the State of New York of a just and equitable method of forest taxation, based on the yield-tax principle. The committee believes that a law similar to the forest tax law enacted by the State of Massachusetts in 1922 should be enacted for New York State.

5. The establishment and the subsequent operation and maintenance of areas, to be known as State Forests, on which the Conservation Commission may demonstrate the practice of forestry and on which timber production shall be the chief purpose. This would call for the acquisition of lands outside the sixteen Forest Preserve counties.

6. In view of the likelihood of the early passage by Congress of laws that will extend the National Forest

policy, particularly measures of the character of the McNary-Clarke Bill, now pending, the Conservation Law of New York should be brought into harmony with the provisions for co-operation in forest planting and in forest management contained therein.

All of the foregoing recommendations require legislation, either in the way of new laws or of modifications of the Conservation Law. A comprehensive forest policy program should also include the expansion and better financial support of certain phases of forestry work already authorized and in operation under existing statutes. Among these are:

7. The extension and active prosecution of an economic survey of the state with particular reference to the location and determination of the areas the best use of which is for the production of forests. All appropriate agencies should co-operate in this work, of which the general direction should rest in the Conservation Commission.

8. Advice and assistance to private owners of forest land in forest management can be given by the educational agencies in the state already engaged in this work. It should have increased financial support.

9. The production of an ample supply of forest nursery stock by the state, to be supplied to the public at a reasonable figure, and an increase in the activity of the state in planting its own lands with forest trees are both matters that should receive much greater financial support than at present.

Of the proposals as to forestry legislation that came directly before the New York State Legislature this winter, one is of particular interest. This was a bill, introduced in the Senate at the instance of the Association for the Protection of the Adirondacks, that sought to have set up a commission to investigate and report upon a forest policy for the state. This bill was introduced by Senator E. M. Rabenold on March 28, 1924, shortly before the end of the session. It was reported out of committee and was passed by the Senate, but died in committee in the Assembly.

The purpose of the bill was to create a state forestry commission "to formulate a state forest policy for submission to the legislature" on or before February 1, 1925. The personnel of the commission was to be as follows, all the members to be appointed by the Governor within thirty days after the act became law: one member each representing the New York State College of Forestry at Syracuse, the New York Section of the Society of American Foresters, the New York State College of Agriculture at Cornell University, the New York State Forestry Association, the Association for the Protection of the Adirondacks, the Empire State Forest Products Association, with the Conservation Commissioner. This commission of seven members was to serve without pay, but provision was made for expenses and for the employment of clerical and expert assistance. The bill carried an appropriation of \$5,000.

The recommendations of the commission were "to include its conclusions as to the most scientific, efficient, and economic method of cutting and removing trees, with

rules formulated by the commission to regulate such cutting and removal and a plan of forest management; but upon this subject of the cutting and removal of trees the report shall be limited to the cutting and removal of trees upon lands other than state-owned lands within the forest preserve counties."

At a public discussion of this measure that took place at a hearing called by the Senate Committee on Conservation, on March 26, 1924, for the consideration of another bill, there was considerable opposition to the retention in this bill of the proviso limiting the report of the commission to lands other than those owned by the state. In support of this point of view the argument was advanced by the timberland owners and by some of the foresters present at the hearing, that unless all the forest lands of the state were to be taken into account, no program of policy proposed could be considered as being comprehensive and state-wide. On the other hand, the representatives of the Association for the Protection of the Adirondacks argued against any alteration that even remotely might seem to lead toward a change in the present wording of Article VII, section 7, of the State Constitution. This position was summed up in the statement that "what we want now is preservation and not utilization."

In that the idea of a report by a properly constituted commission upon an expansion of the forest policy of the State of New York is approved as well by the timberland owners, by those who are primarily interested in the New York State Forest Preserve because of its unquestioned value for recreation and for watershed protection, and by a majority of the professional foresters in New York and in that this proposal of 1924 is but one of several similar bills that have been suggested or introduced in recent years, it is greatly to be hoped that at the next session of the legislature, in 1925, some measure can be introduced that will command sufficient support to insure its passage. It seems long in coming, but ultimately New York State must adopt a comprehensive and rational state-wide forest policy.

The Fellow that Dropped the Match

"Most anny book on woodkraft has a hole lot on how to bild a camp fire, but no one of them tells how to putt it owt when bilt. This is the mane thing to no, and for lak of nollidge on this subject our mity forists dwindle every yere and git littler every time they dwindle. Enny fool with a match can destroi moar furst class rale timber in half a day than the Yoonited States Forist Commishun can propygate in awl summer. As the poit trooly sais:

"He dropped the match when he lit his seegar,

And it fell in a bunch of grass;

And then he went on to shute his bar

In the distunt mountain pass;

And a blaze shot uppard, the wind it riz,

And the fire spread awl over the patch,

And the melted pants button they found was his—

The fellow that dropt the match."

The Drumming Grouse

By E. J. Sawyer

WRITERS on the drumming of the ruffed grouse, the present writer included, seem to have neglected to explain sufficiently the ventriloquial quality of the drumming sound. One observer writes me, asking particularly about this point. There is, perhaps, nothing about the drumming so characteristic and so commonly noticed as the feature in question; hence some explanation of the latter surely seems to be called for.

The explanation is not far to seek. Indeed, it has seemed to me that, attention having been once called to the fact that the sound itself is made by the striking of the *air*, the ventriloquism almost explains itself. The air is such a wide-spread, indefinite thing that any sound having no other sounding-board is apt to be quite vague as regards apparent distance and direction. The whirl of an aeroplane propeller, the swish of a passing missile, the whistle of a wild duck's wings somewhere overhead, like the whirl of the drumming grouse, are all of the same baffling quality. Those who have heard the wings of passing ducks, when it was too dark to see the birds, know how difficult it is to form a fixed idea of the distance or direction of the sound. I recall one occasion when I was much mystified by a loud wind-like sound until I saw a duck hawk swooping down with set, bowed wings. He was surprisingly far away and in a quite different direction from what I had supposed the sound came.

I believe, too, in the case of the drumming, that the trees intercept and somewhat echo the sound, and thus add to its mystifying effects.

The *final* whirl of the drumming, on the other hand, as the writer has elsewhere pointed out, is lacking in the ventriloquial quality. This is because the wings now describe a lower and smaller arc. In fact, the twigs, herbage, and dry, dead leaves are often seen and *heard* to be stirred up about the drummer, as his drumming becomes an intense, restricted fluttering and finally ends. In other words, the sounding-board is no longer the limitless air above the beating wings, but it is the limited air space between those wings and the log and ground, in addition to the leaves audibly rustling on the ground itself. All of this tends to

localize the sound and therefore to enable the hearer to find the drummer, which had previously seemed to be in almost any direction and at any distance.



From a painting by E. J. Sawyer

A RUFFED GROUSE BEGINNING TO DRUM

The picture shows the bird when the wings are held motionless for an instant before one of the outward and upward strokes which produce the drumming sound.



CONQUERING THE HIGH PLACES. MATCHING ONE'S STRENGTH AGAINST A MOUNTAIN IS NO PETTY TASK, AND ONE OF THESE INTREPID CLIMBERS HAS CLIMBED THE FORTY-SIX MOUNTAIN PEAKS OF 14,000-FOOT ELEVATION IN COLORADO. THIS IS HOW IT IS DONE. CARL BLAUROCK IN THE LEAD, FOLLOWED BY DUDLEY SMITH AND ROBERT WILSON, TWO COMPANIONS OF BLAUROCK AND ERVIN ON MANY OF THEIR CLIMBS



LONGS PEAK, A FAVORITE CLIMB IN THE CENTRAL PART OF THE MOUNTAINS OF COLORADO IN ALL THEIR SEASONAL AND HOURS

The Lure of the Land

*A Story for the Lover of Mountains
Jagged Monarchs of the Earth
Challenge Devotees of*

BY ARTHUR HAWTHORNE



TIMBER-LINE breeze moaned through the canyon. I turned my face towards the heavens and was suddenly seized with the hopeless feeling of having been plunged to the bottom of a great dark pit out of which I should never climb, for above me towered Sierra

Blanca, the White Crag.

I had seen Blanca in many moods—clothed in mists of dawn, shunning the clear white light of the morning sun; standing forth boldly, with dominating strength, in the glare of midsummer brightness; but this night, as I stopped under the gigantic cliff which forms the northern face of the mighty mountain, Blanca showed a new personality, a new majesty. The tip of its summit seemed to reach into the infinite through the black sky, intruding upon the dance of the stars.

Perhaps it is character in mountains which beckons to the mountain-climber. If that is true, Blanca will some



CENTRAL PART OF THE STATE. TO KNOW THE HIGH MOUNTAIN AND HOURLY CHANGES IS TO KNOW THE GOD OF NATURE

Land Above the Trees

*Mountains, of the Land Where the
of the High Ranges Defiantly
Notes of Hazardous Sport*

R HAWTHORNE CARHART

through day be recognized as one of the most interesting climbs in America. A trip to the top of this mountain is not so fraught with danger as are some other climbs, but there is the ever-changing mood of the mountain, the varying outlook, and always the challenge of the high peak.

Another fascinating feature of mountain-climbing is found in the outlook from the high shoulders and tops of the peaks. Whole kingdoms are spread before one's gaze. Seas of tumbled ridges and valleys sweep away to blend into the horizon miles away. And then there is the sporting element. It is not always certain that the climber will reach the top without a struggle. Matching one's strength against a mountain is no petty task. There is ever present the possibility of the most daring mountaineer failing properly to gauge his abilities and falling before the granite ramparts are topped. That mountain-climbing is one of the finest of sports is becoming more generally recognized, as shown by the tremendous increase in the number of people going to the tops of our highest



1,000 FEET DOWN ON EITHER SIDE! PERHAPS THE ALPS DO OFFER CLIMBS AS SPECTACULAR AS SOME FOUND IN OUR OWN ROCKIES, BUT IT IS DOUBTFUL IF ANY SECTION OF THE WORLD OFFERS A GREATER VARIETY OF ACCESSIBLE CLIMBS THAN CAN BE FOUND ON THE SIDES OF COLORADO'S HIGH MOUNTAINS. THIS IS A SPUR OF SAN LUIS PEAK, COCHETOPA NATIONAL FOREST

peaks and in the general interest being manifested in this field of outdoor recreation.

No more enlightening evidence of this interest may be found than in a friendly contest which developed in the Colorado Mountain Club a few years ago. I have heard that it started in this manner. One day George Barnard, an enthusiast in mountain-climbing, had a few days' vacation. He quietly donned hobs and dropped out of sight for a few days. A week or so later it was reported that Barnard had climbed Redcloud and Quandry Peaks.

"Where are those peaks?" it was asked, and there was amazement for many when they were told that these two peaks are both more than 14,000 feet high.

Two weeks later another rumor, later verified, was broadcast among the members of the Mountain Club.

culty of getting from one ledge to another, a dangerous slide in loose rocks, or a night marooned under a friendly spruce. These tales whetted the appetites of the hardy climbers. They wanted 14,000-foot peaks—tough ones and lots of them.

A few weeks ago I was hurrying through the crowds on a busy street of Denver. The snippy clack of hobnails instantly caught my ear. Footgear of business does not make such a sound. Turning, I beheld Carl Blaurock in his climbing outfit. I hailed him.

"Where to this time?"

"Kit Carson," he replied.

"Kit Carson; Is there such a peak?"

"Yes, you know we have found that there really is a Kit Carson Peak. For a long time we all thought that



Photograph by W. I. Hutchinson

GRAYS AND TORREYS PEAKS, TWO REPRESENTATIVE MEMBERS OF THAT GOODLY COMPANY OF FORTY-SIX, COMPRISING COLORADO'S "HIGH SOCIETY" OF MOUNTAIN PEAKS OF OVER 14,000 FEET ELEVATION

Blaurock and Bill Ervin had climbed Bross and Princeton Peaks and, to round things out, were going back into the Leadville National Forest to scale Antero, Cameron, Yale, and Harvard—all peaks over 14,000 feet high. That they kept their word is now history. But that was the beginning of a friendly contest which resulted in more people climbing more 14,000-foot peaks, one right after the other, than has probably ever been the case in our nation. Attention was instantly focused on these master climbs of our Rockies.

A spirited rivalry took possession of the climbers. First one would lead in the number of peaks scaled, then another. Every vacation of a few days would add a new mountain scalp to a climber's belt. New achievements were productive of exciting tales of the climb—the diffi-

Kit Carson and Humbolt were the same; that there had been a duplication in the naming. But one of us discovered that the big round-topped mountain directly north of Crestone Needles is Kit Carson; and it is over 14,000 feet!" His eyes fairly sparkled.

"That is the last for Bill Ervin and me," he added.

The friendly contest was approaching an end, with Blaurock and Ervin ahead. Two weeks later I invaded the office of Blaurock. It is a most interesting place; for there gold dug and sweated from the veins of our great mountains is retailed to jewelers, dentists, and others requiring metals of particular fineness.

"Sit down," directed Blaurock.

"Just want to talk mountain-climbing," I said.

He smiled and musingly looked away into space; for

the last of Colorado's named peaks over 14,000 feet had felt the imprint of his climbing shoes and those of his friend, Ervin, and if other peaks of similar height were to be climbed they would have to go afield into other states and countries.

"What has it brought except the knowledge that we have climbed them all?" he said, repeating my question. "First, I believe, is a knowledge of the mountain lands of our state. If we had not climbed these peaks, it would have taken us many years to get as thorough a knowledge of our state as we now have. In three seasons' time we have looked from the tops of all our highest points. That, and the satisfaction of having climbed them are probably the most worth-while features of all the climbing we have done."

"Any danger in some of the climbs?" I asked. I admit that I am a mere novice beside these men who have climbed so many. I boast of only five major peaks—a paltry nickle's worth in comparison with the grand total climbed by some members of the Mountain Club.

"Yes, there is danger," he replied. "But there is that in walking on a city street. What is more important, you are your own danger in the mountains. There are no other people except those of your party to reckon with. If you know them you feel safe. On a crowded street the other fellow is your danger and you don't know him. The worst danger of all in mountain-climbing is the tender-foot. I recall one occasion when I had to tell a rattle-headed novice that if he did not put himself absolutely in our hands for the rest of the trip and do what we directed he would have to take the back trail at once. Just so long as you keep your head, do not get rattled, and do not have some greenhorn to contend with, you are as safe on a mountain as anywhere. You never get in a tight place that you cannot figure your way out of, if you have time and keep your head. Of course, some climbs are more dangerous than others."

"The Crestone Needles, for example?" I interjected.

"That is a stiff climb from the east, but not bad from the west side," he replied. "I'd say that the most dangerous climbs of all are the Wilsons."

"The Wilsons!" I exclaimed. "Those appear to be the most round-topped peaks in the southern part of the state. I should have supposed that they are an easy climb for the most inexperienced."

"Nothing of the sort; they deceive you," said Blau-rock. "When you get above timber-line you run into radiating ridges which come out from the center peak like spokes from a wheel. These ridges are mighty narrow and every rock is ready to roll. It is the most dangerous approach to a peak that we have ever tackled."

I took his word for it, for of all men he should know.

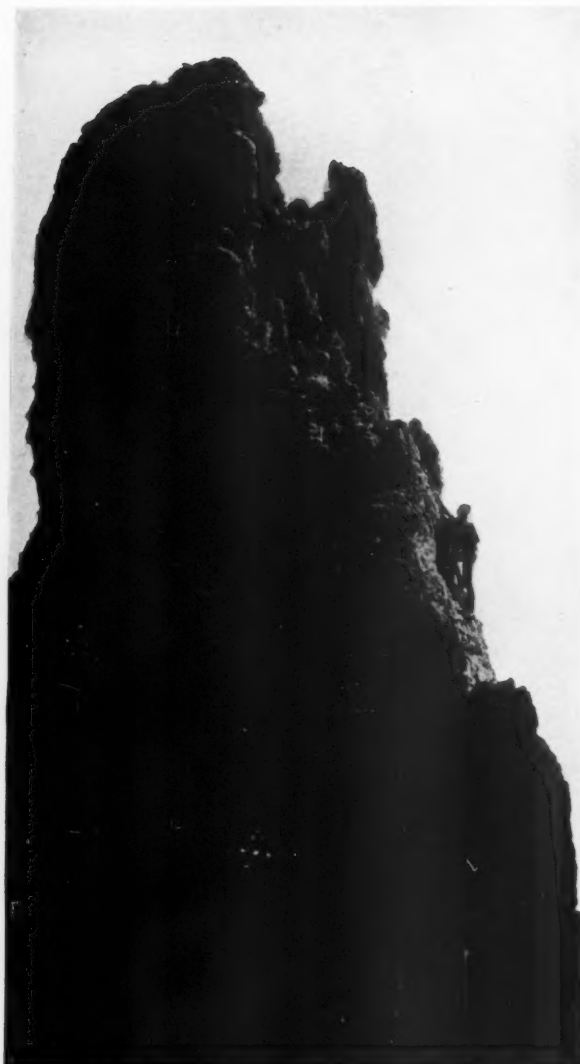
"And which peak is the most interesting to climb," was my next question. "Which would you go back to time after time just to scramble up over the old fellow?"

He thought for a moment.

"Longs Peak is a good climb. It has interest at every turn. That is true, too, of many of the peaks in the southwestern part of the state. But of the whole list, I



GOING UP! ROGER TOLL, SUPERINTENDENT OF THE ROCKY MOUNTAIN NATIONAL PARK, ON THE SLOPE OF LONGS PEAK, THE HIGH PEAK OF THE PARK



CARL BLAUROCK SCRAMBLING UP THE SIDE OF THE "CRESTONE NEEDLES." NO ALPENSTOCK, NO ROPE, NOTHING BUT SKILL AND A GOOD STOCK OF NERVE, ASSIST OUR AMERICAN MOUNTAINEERS TO SCALE THE HEIGHTS. IF YOU WOULD BELIEVE SUCH IS AN EASY TASK, FOLLOW BLAUROCK'S TRAIL TO THE TOP OF CRESTONE, IN THE SAN ISABEL NATIONAL FOREST, IN COLORADO

think I should go back oftenest to Sierra Blanca than any other one. That peak has real character."

In that statement, perhaps, you have the essence of the mountain-climbing idea. Blanca has character, is friendly, is moody, is threatening, challenging, inviting. To know the high mountains of Colorado in all their seasonal and hourly changes is to know the God of Nature; and to know the God of Nature is to draw strength untold for the daily battle of life. One does not have to go to Europe to get the sport and the infinite inspiration of mountain-climbing. It exists in our own country. The recent unofficial contest in the climbing of Colorado's highest mountains by members of the Mountain Club demonstrates what a wide field of sport lies

within our own boundaries. What have these American alpineers done?

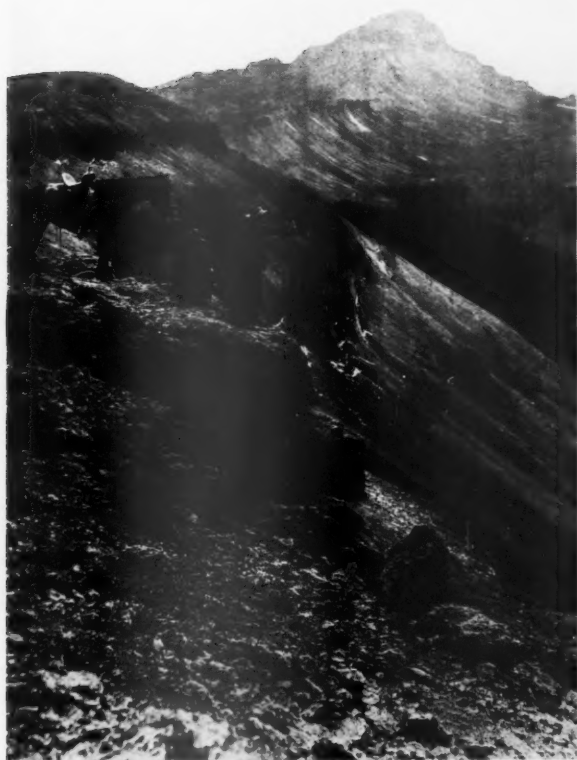
There are forty-six peaks in Colorado which are 14,000 feet or more in elevation. It is probable that every one of these peaks entailed a climb of more than a mile in elevation alone. Some of them represent a vertical climb of nearly two miles. If the average is placed at a mile and a half from the foot of the peaks to the top, Blaurock and Ervin, in climbing these forty-six peaks, scaled mountains which if piled end on end would reach into the heavens sixty-nine miles. And there are a dozen other mountaineers that lack only a few peaks to make their complete list of the forty-six climbs. It makes one dizzy to think of it!

This could never be accomplished if it were not for the many peaks of this altitude in Colorado. There are about fifty-four named peaks in the continental United States over 14,000 feet in elevation; so Colorado is fortunate in the number which it possesses. Furthermore, the lower mountains are readily reached by auto roads or railroads. Some are easy to climb—hardly more than a

Mountain Peaks Over 14,000 Feet Elevation in the State of Colorado

Name.	Height.	County.
Elbert	14,420	Lake.
Massive	14,404	Lake.
Harvard	14,399	Chaffee.
Blanca	14,365	Alamosa, Costilla, Huerfano.
Grays	14,341	Clear Creek, Summit.
Torreys Peak	14,336	Clear Creek.
La Plata Peak	14,332	Chaffee.
Crestone Peaks	14,291	Custer, Saguache.
Uncompahgre	14,286	Hinsdale.
Lincoln Peak	14,276	Park.
Castle Peak	14,259	Gunnison.
Evans	14,259	Clear Creek.
Quandary Peak	14,256	Summit.
Wilson Mountain	14,250	Dolores.
Antero	14,245	Chaffee.
Cameron	14,233	Park.
Longs Peak	14,225	Boulder.
Schavano	14,179	Chaffee.
Princeton	14,177	Chaffee.
Yale	14,172	Chaffee.
Bross	14,163	Park.
San Luis Peak	14,146	Saguache.
Sneffes	14,143	Ouray.
Crestone Needles	14,130	Custer, Saguache.
Maroon Peak	14,126	Pitkin.
Old Baldy Peak	14,125	Costilla.
Pikes Peak	14,110	El Paso.
Humboldt Peak	14,100	Custer.
Kit Carson	14,100	Custer.
Windom	14,091	La Plata.
Eolus	14,086	La Plata.
Columbia	14,070	Chaffee.
Culebra Peak	14,069	Costilla, Las Animas.
Sunlight Peak	14,060	La Plata.
Redcloud Peak	14,047	Hinsdale.
Bierstadt	14,045	Clear Creek.
Sherman	14,038	Lake, Park.
Stewart Peak	14,032	Saguache.
Wilson Peak	14,026	San Miguel.
Grizzly	14,020	Chaffee, Pitkin.
Wetterhorn	14,017	Hinsdale, Ouray.
Sunshine Peak	14,015	Hinsdale.
Handies Peak	14,013	Hinsdale.
North Maroon Peak	14,010	Pitkin.
Democrat	14,000	Lake, Park.
Pyramid Peak	14,000	Pitkin.

tiring walk—such as Mount Evans and Pikes Peak; others are more arduous. Blanca, Crestone, Longs, Sunlight, Handies, Maroon, and many others dare you to brave the climb to the top. One solid summer of mountain-climbing does not exhaust the possibilities of Colorado's land above the trees, for after the forty-six highest peaks are topped, there are scores of other peaks only slightly less in elevation. Some of them are no less dangerous to climb.



Photograph by U. S. Forest Service

UNCOMPAHGRE PEAK, IN THE NATIONAL FOREST OF THE SAME NAME. TWENTY-NINE PEOPLE CLIMBED THIS PEAK IN 1923—THIS IN SPITE OF THE FACT THAT IT IS A LONG TWO-DAY TRIP FROM THE RAILROAD TO THE TOP AND RETURN

Of the latter, Arapahoe, Snowmass, and Holy Cross peaks are classed by the Mountain Club as of sufficient quality to "qualify" a climber. Lizzard Head, the American Matterhorn, Eureka, the Spanish Peaks, Spread Eagle, and others little known, have rough, craggy heads which almost touch the coveted 14,000-foot sky mark.

Whenever you feel the need of thrills; when your ambition will not be quieted by the breaking of a golf score or the winning of a bowling match; when you crave real action, get a pair of hobs, sharpen your sky-hooks, and take a whirl at mountain-climbing. Our

[Continued on page 382]



Photograph by U. S. Forest Service

Craggy-headed Holy Cross Mountain. The ascent is made along the ridge to the right. When one stands on the top of this peak, his head is only 16 feet below the 14,000-foot elevation



Photograph by U. S. Forest Service

SIERRA BLANCA, THE MOST ENGAGING MOUNTAIN PERSONALITY IN THE WEST. THE TOP MUST BE REACHED BY TRAVELING ONE OF THE RIDGES RADIATING FROM THE TOP



EDITORIAL

The Conference on Outdoor Recreation

AS THIS issue of *AMERICAN FORESTS AND FOREST LIFE* comes from the press, the National Conference on Outdoor Recreation, called by President Coolidge for May 22-24, inclusive, in Washington, will be in session. The conference is a timely recognition of a rapidly growing need throughout the nation—the need for a definite, clear-cut policy of recreational development for our people. In almost every state, local and regional organizations have sprung into being during the last two or three years, in response to an awakening sentiment for recreational facilities as basic elements in right living and right progress. These organizations are fired with the spirit of action, but unfortunately many of them do not know where to begin or how to proceed most effectively. In consequence their efforts are disorganized and uncoordinated, because there is lacking a great national program as a working objective.

The President, we believe, has acted wisely and timely in calling together representatives of our national, state, municipal, and private bodies interested in outdoor recreation to formulate a national policy. How logically this undertaking follows former efforts toward the conservation of our natural resources! In early years the hand of plenty stayed the thought of natural resources and the need to conserve them; but, as the ravages of unmeasured use began to point to the ends of supply, our natural resources one by one have become definitely written upon the nation's escutcheon. Only in the last few years have

we, as Americans, come to consider the condition of our once splendid outdoors as a natural resource for recreation. And yet, what resource shall we say is more important? No nation can live and prosper without play. Man needs to explore, to study, to claim the outdoors. The small lad who for the first time explores a neighboring wood is following a primitive desire, and from it he gets strength and confidence. And to those sad souls who have lost this desire, hope comes again from sunshine and air, whether it be in the city park or in the cool solitude of a great forest.

The growing public sentiment to make provision for outdoor recreation is one more symptom of our national malady of forest destruction in the United States. Without forests, outdoor recreation would be a pitiful pastime for a vigorous nation. The shrinkage of forests throughout a good part of our country has taken away the universal opportunity for outdoor life, and here, we think, is the basic cause of the widespread and rapidly developing sentiment for recreation preparedness. The subject is one which needs national direction, to the end that outdoor recreation may take its proper place in the economics of the whole conservation movement. It is to be hoped that out of the conference will come a definite program which will rationalize and co-ordinate the movement and will clearly establish the principle that forest reconstruction is the cornerstone of the whole edifice of outdoor recreation.

The Next Step in Forest Legislation

LATE in April, the Clarke Bill, embodying new forestry legislation, was passed by the House of Representatives with several minor amendments which do not affect the major aspects of the legislation. As this is written, there is every reason to believe that the same bill will be passed by the Senate before the end of May. The President's sympathetic attitude toward the measure indicates that he will sign it and that it will thus become a law.

The passing of this measure will mark gratifying progress in forest legislation. It must not, however, be permitted to serve as a stop-all for the time being for other much-needed forest legislation. The fear has been ex-

pressed that the McNary-Clarke Bill, being inadequate to all National Forest needs, will, when passed, allay political pressure for further legislation pertaining to federal forest policy. We believe there is a real danger here. The passage of the bill must mark no relaxation in efforts to obtain the further legislation needed to build up a really effective and properly balanced forest policy for the nation.

As a matter of fact, the real work is ahead. The McNary-Clarke Bill in itself carries no appropriations. It merely authorizes Congress to make them. The crux of forest progress is not so much in the laws written

upon the statute book as in the fiscal program to which the Government is definitely committed. The appropriations authorized by the Clarke Bill, if finally passed, will provide nothing for the purchase of National Forest lands, one of the most vital measures of forest progress. Here is an outstanding example of a forest program written into the law which has fallen somewhat by the wayside. The original program of land acquisition, under the Weeks law, begun more than a decade ago, is only one-third completed. Not only are annual appropriations less than one-half those originally contemplated, but every year the Weeks Law appropriation is a matter of grave doubt.

Legislation enlarging the work of forest land purchases by the Federal Government and placing it on a definite fiscal basis is by all odds the most important next step in shaping our forest policy. That, we believe, is the issue on which all forces must unite, with the object of accomplishment, at the next session of Congress. The American Forestry Association has repeatedly urged the importance of this legislation, and in the February issue of

this magazine it published a proposed bill which would remove present limitations on federal purchases of forest land and would place the work on a scale more nearly commensurate to our needs. The measure was not forced at this session of Congress, however, because of a general feeling that it would raise the old ghost of unconstitutionality created by a decision of the House Judiciary Committee in 1908 and would thus jeopardize the success of the McNary-Clarke Bill. The specter of that old decision has, we think, been effectually laid by the enlightening statement of Mr. E. A. Sherman in the May issue of AMERICAN FORESTS AND FOREST LIFE. The ground has thus been cleared; urgency for action is predominate. The Federal Government, as rapidly as possible, should be acquiring forest lands for timber production at a rate of expenditure approximating \$10,000,000 a year. A National Forest policy will not be worthy of the name until forest land purchases are definitely and adequately written into it. Let us begin now to gather strength and cooperation for this much-needed next step.

A Great Forest Threatened

THAT magnificent island of forest in northern Arizona included in the Grand Canyon National Park and the Kaibab National Forest is the scene of a far-flung battle between man and beetle. During the last few years the famous beetle known by the forbidding name of *Dendroctonus ponderosa*, which wrought such havoc in the Black Hills in 1901-05, has marshaled its hordes on the Kaibab Plateau, where it threatens to destroy the scenic beauty of the forest-covered slopes of the Grand Canyon of the Colorado. Those who have visited the northern rim of the Grand Canyon and explored the open forests of the Kaibab Plateau know it is one of the finest National Forests and wild-game preserves of the whole country.

The late Emerson Hough characterized the Kaibab Plateau, with its wonderful trees and its thousands of white-tailed deer, its remarkable Kaibab squirrels, found nowhere else in the world, as the President's forest. The hunting ground of Theodore Roosevelt, the home of wild life and forest trees, the beauty of the Grand Canyon, and two billion feet of the nation's remaining timber are

threatened by the onslaught of this little beetle, a small, black, hard-shelled bug with powerful jaws and only about one-fourth of an inch in length.

In 1922 the Forest Service, in co-operation with the Bureau of Entomology, spent \$9,000 in combating these beetles, and in 1923, \$10,000. The urgency of the situation became so great that this spring the department obtained an emergency appropriation of \$25,000, which it expects to spend before August 1. Certainly, no efforts should be spared to stop this infestation. The Kaibab Plateau is one of the nation's finest forests. It will some day be an entry way from the north to the Grand Canyon, through which probably as many people will pass as by the southern route. The destruction of the twenty-five miles of wonderful pine forests bordering the north rim of the canyon would be a national calamity. If the present fund available to the Government forces for the work of combat is inadequate, Congress should not hesitate to make available an amount sufficient to stop the destruction as rapidly as possible.

Let Uncle Sam Give an Example

SOUND charity begins at home, and why not sound forest taxation? Senator Moses, of New Hampshire, asks that question, referring to federal advice to state governments to reform their taxation laws so as to encourage forest reproduction, and answers it himself in characteristic fashion. The answer is in the form of amendments to the pending federal revenue bill.

Under present federal income taxation practice certain outlays for the conservation and replacement of timber—such as fire-fighting expenditures—are deductible as current expenses, as Senators Moses and Couzens pointed out in their addendum to the report of the Select Com-

mittee of the U. S. Senate on Reforestation. But there is nothing in present law or practice of federal taxation that is constructive in relation to forestry.

Briefly, Senator Moses proposes that what may be grouped together as reforestation expenditures may be deducted in calculating net income or may be capitalized at the taxpayer's option, "provided that in the case of such expenditures for planting and (or) culture there may be deducted in any one year not to exceed \$15,000, or 15 per cent of the net income of the taxpayer, computed without the benefit of this subsection, whichever is greater."

A further amendment provides that only one-half of the net income from the sale of crops of timber under management arising from seed trees, trees left for further growth, and second-growth timber produced by artificial means shall be included in computing taxable income.

A major part of the burden of taxation on forest lands under reforestation is a state affair; but certainly, if the Federal Government is to urge and encourage the states to remodel their land taxes in the interest of forestry, it is incumbent upon it to do what it can within the scope of its taxation authority. The Federal Government reaches forest lands through taxation of the income derived from them, and to permit the deduction from gross

income of expenditures for reforestation, and to reduce the amount of net taxable income from lands under reforestation, is but just and proper encouragement of the slow and tedious process of timber-growing, with its many hazards and long-deferred pecuniary rewards.

The Moses amendments should keenly interest all small and incidental land-owners, such as farmers, and should constitute a substantial inducement to larger owners to undertake reforestation as a managed business. But even if it does not have great substantial value as direct incentive to reforestation, its exemplary value is great to the state governments that are considering how to adapt taxation to reforesting land.

National Parks and Recreation

IF ALL of the bills introduced in the present session of Congress providing for the creation of National Parks in the Southern Appalachians were passed, natural resources the value of which aggregates probably \$100,000,000 would be locked up. This epidemic of park bills is the aftermath of the proposal of a national park in the Southern Appalachians. It would appear that almost every community is advancing its claim for a national park, and keen rivalry is already developing. Undoubtedly these different communities dream of having a national playground at their thresholds, for a common popular conception seems to be that the proper way to meet the great national demand for outdoor recreation is by the creation of national parks.

This, of course, is not the case. A national park is not created primarily to provide recreation, but to preserve, as Secretary Work has declared, "scenery of a quality so unusual and impressive, or natural features so extraordinary, as to possess national interest and importance, as contradistinguished from local interest."

National parks, of course, provide great opportunities for recreation, just as do the National Forests; but the great problem of providing outdoor recreation for our people will not be wholly solved via the national park

route. The problem is one which must be solved, so far as the government is concerned, by correlating recreation in the uses of our national parks, National Forests, national monuments, military reserves, game preserves, and other types of government land without changing the basic purposes for which those properties have been set apart.

We favor the establishment of a national park in the South, provided the rational development of the resources of the region makes that form of public land administration a desirable factor. But we think it unfortunate and prejudicial to the best development of the South for local rivalries and jealousies to develop in the mad fervor of local pride to claim a national park. How much better it would be, both for the South and for the committee responsible for the selection of a national park in the Southern Appalachians, for the South to unite and to recognize that its greatest hope and its greatest distinction lies not in a myriad of mediocre local parks, but in one outstanding park of national majesty. But whether or not the South takes this larger vision, the committee selected to recommend a national park area in the Southern Appalachians can, we think, be counted on to select not local "picnic grounds," but a natural museum of national distinction.

The Game Refuge Bill

IF BY some magic we could bring into the United States today the same number of wild fowl—migratory birds—that existed when this country was discovered, I believe that a majority of them would starve to death, for the reason that the inroads of civilization have so destroyed the physical conditions of the country that these birds could no longer exist. In relation to the existing stock of wild fowl that we have in the country, we are faced with a serious condition, because these birds cannot live in the air; they must have a place in which they can breed and feed, and we are faced with the condition that these feeding and breeding areas are being destroyed. The protection of the migratory birds of the country depends upon the Federal Government taking over now the control of the breeding and feeding areas. There

is no other way under heaven that these birds can be saved for ourselves and posterity unless something is done."

In this statement William C. Adams, Director of Fisheries and Game of the State of Massachusetts, when he appeared before the House Committee on Agriculture in support of the Game Refuge-Public Shooting Grounds Bill, sums up the urgency of the legislation proposed by the measure. This bill, as we have previously pointed out, is the most important wild-life measure which has been before Congress in recent years. Special efforts must, therefore, be made during these closing days of the session to have Congress give the measure special consideration, in order that it may be enacted into law without having to go over to the next session.

A Wild Game Retreat in a City's Heart

By JUANITA WITTICH PORTER

WHERE but in California, the land of the impossible happenings and the superlative degree, would one look for a wild-game sanctuary in the heart of a large city? And here only is such a place recorded, here in Oakland, "Across the Bay" from San Francisco.

Just five minutes' walk from the City Hall is a beautiful inland lake, a body of water a mile long by a half mile wide, or one hundred and sixty acres—Lake Merritt. Here the wild ducks come by the tens of thousands, and they remain until the warm weather returns in the spring and they may safely return to their Northland.

The first visitors to arrive are the sprig or pintail, which arrive late in August and are here in all their numbers by early September. Most of this species come from the Klamath Reservation in Oregon. The next arrivals are

pintails, widgeon, green-wing teal, mallard, shovelers and gadwell, which migrate from "the Flats," a tract of about three hundred square miles of marsh land lying in the vicinity of Circle City and Rampart, Alaska, which early freezes. The third and last group comes from the Yukon Delta and the Saskatchewan country, being principally canvas-backs and red-heads.

And then begins the hunting season in California—October 15.

For the first few weeks the ducks cannot be driven from the feeding grounds in the marshes reaching over miles between San Francisco and Sacramento; but soon they "become wise" to the hunter and seek a safer haven. This they have found in the lake in the very heart of Oakland, a city of 200,000, and which is surrounded by some of the most aristocratic homes of the place.



WILD DUCKS ON LAKE MERRITT

Thousands of wild ducks make Lake Merritt, in Oakland, California, their winter refuge in the hunting season. Many varieties are to be found here, and as they are daily fed by the city authorities, the ducks become so tame as to eat out of the hand.

At the head of the lake stands Oakland's famous Civic Auditorium, erected at a cost of over a million dollars and with a seating capacity of 13,000 people. Its front lawn borders the lake.

About a quarter of a mile of water is wired off by the city authorities, and in this inclosure the wild ducks find protection; they seem quite safe from danger in various near-by lawns and on numerous roofs, where they make themselves quite at home and are great pets of the children. The city feeds the birds daily at 10:00 a. m. and 4:00 p. m., and at these hours throngs of visitors line the

walks or drives about the lake, delighted with this most strange and wonderful picture of nature and civilization in such close touch with one another.

A more beautiful sight would be hard to imagine: countless thousands of winged creatures in every glinting, vivid, iridescent, changing coloring conceivable—a shimmering, bewildering, ever-changing mass of wild loveliness.

Oakland delights in her winged visitors of the North, and she makes their welcome so assured that she is ever confident of their return.

The Alaska Game Situation

[Continued from page 328]

It must be remembered that the Kenai Peninsula game country is, without doubt, the most accessible for sportsmen and for hunting in all Alaska. A sportsman can be in the heart of the moose or sheep country within 36 hours' travel, after alighting at Seward off the boat from Seattle, and he can ride comfortably in the observation car of one of Uncle Sam's trains the first part of the way, and then on a motor-boat down the Kenai Lake and River and right to the edge of the hunting grounds.

It is readily accessible to the local population from the good-sized towns of Seward and Anchorage and the smaller towns along Cook Inlet, but in spite of all this, it is about the only section of which I know where any man can go out and be absolutely sure of not only getting his moose, but being able to pick a good-sized head.

I have made three trips into the Kenai moose country; also, I have visited that section on seven different occasions. My last trip into the moose region was during September and October of 1922, and on that trip I personally saw on one occasion in the neighborhood of 60 moose, all in view at the same time. There was not a single day

while in the back country that I did not see at least eight or ten moose.

Not that laxity should be permitted regarding killing moose on the Kenai, but it is in itself evidence of the conditions existing there.

WHAT IS NEEDED

To sum up the game situation in Alaska as I have seen it, the greatest need is for more game wardens to enforce the laws and more adequate funds for the use of the wardens now serving in the territory.

All of the game wardens that I have met in Alaska have been very high-class types of men, with a serious and conscientious attitude towards enforcing the game laws and a keen interest in the general welfare of the game.

They know the conditions and problems of their own districts, and it will be largely through them that the situation will be successfully worked out. If the new Alaska Game Commission law is passed by Congress, it and the wardens should be given adequate support and backing; then the game of Alaska will be preserved as a credit and pride to the territory and the nation.

Planting Black Walnut

[Continued from page 348]

Another method is to set out one-year-old seedlings that have been grown in a garden or nursery bed. These may be easily produced by planting in early spring walnuts that have been stored over winter in a pit, cellar, or ground cave.

In favorable soils, black walnut grows at a moderately rapid rate. During the first year in the nursery the seedlings will reach heights of 12 to 18 inches. In the central Ohio Valley, the open-grown or "grove" walnut averages about 35 feet in height at 20 years, 55 feet at 30 years, and 65 or 70 feet at 50 years. An average diameter (at breast height) would be about 5 inches at 20 years of age, 9 at 30 years, and 15 at 50 years. Black walnut does not grow well if shaded. Its foliage is so thin that in plantations unmixed with other kinds of trees the shade is not sufficient to prevent the growth of weeds or grass. Hence it may be planted to advantage with other trees of heavier foliage, such as sugar maple, osage orange, white oak, hickory, mulberry, red cedar, or Norway spruce.

The Royal and Paragon walnuts are two of the hybrids produced by plant breeders. Available records as to the rate of growth and yield of hybrids are meager and somewhat conflicting in character. Until sufficient information is available for reliable conclusions, it is believed that planting should be made on an experimental or conservative scale.

Because of the many points of excellence possessed by the black walnut, many of the state forestry departments, as well as the Federal Forest Service, have available printed information going into more detail on how to plant and grow the tree. In view of the heavy drain upon the supplies of walnut all the years since the country was first opened up, it seems really remarkable that our sawmills are cutting yearly around 50 million board feet for lumber and veneer. The dual products of the tree—timber and nuts—make this one of the most desirable to have growing on the farm and about the home.

Bermuda Wedding Trees

By C. A. KING

A VERY old custom at Bermuda weddings, but which has greatly fallen into disuse, was the planting of a young tree by the bride at the wedding ceremony, and it was done in the following unusual, quaint, and picturesque way:

The wedding cake was made several layers or tiers high, all covered with icing and designs in icing, as is customary with wedding cakes. In this case, however, the top layer had a hole in it, like the hole in an angel cake. A young Bermuda cedar (*Juniperus Bermudiana*) was obtained, one about 8 inches to 12 inches high and as perfectly formed as could be found. The roots were carefully wrapped in paper and the little tree placed in the hole in the top of the cake, forming a very pretty crowning ornament to the cake.

After the marriage ceremony the bride made the first cut in the cake, thus releasing the little tree, which was then immediately taken by the young couple and planted in the front garden of their future home. In order to mark this tree apart from other cedars which might be growing about, it was planted in a mound built up above the general level of the lawn.

This was a common custom from 100 to 200 years ago, and several very old "Wedding Trees" or "Cake Trees," as they are also called, are still in existence on the islands and highly venerated by the Bermudians, especially the descendants of the original planters. The "Wedding Tree" of Sir William and Lady Burnaby can be seen in front of the west wing of the new Bermudiana Hotel, for it was in front of this house that the tree had been planted many years ago.

This custom was recently revived at the marriage of Miss Elinor Bluck, the daughter of the present mayor of

Hamilton, Bermuda, to Charles N. A. Butterfield, and the following is an account of this wedding tree which appears in the *Royal Gazette and Colonists' Daily*, of Bermuda:

"Dr. F. L. Patton performed an interesting ceremony when he planted a cedar tree which had formed part of the decoration of a special cake made for the bride and which was hung with old family relics and heirlooms.

This cake, with its quaint and apt decorations, was the happy thought and gift of Mrs. John Fowle, an aunt of the bride, and was accompanied by the following verse:

Plant for futurity, Elinor dear,
This little cedar tree, somewhere near.
On a far-distant day, in the years that may be,
A man or a maid
Beneath its cool shade
May joyfully say,
In a reverent way,
'This was great-grandmother's wedding tree.'

"Dr. Patton said that the occasion made him look forward rather than backward. He hoped that in the years to come a similar event might take place on that very spot, when the young people, who were now principal actors on this day, might look back with pride on the part they had played in the business of life."

Many times, in the olden days, the tiny cedar tree, with its roots carefully wrapped, was placed in a glass receptacle in the center of the bride's cake. This little tree was then silver-leaved, as was the

whole cake, and ornamented with egg shells, also covered in silver. Some would be the whole shell, others cut in half, in which would hang a little silver tongue, to represent a wedding bell, and these would be suspended by silver silken threads to the tree. After the wedding ceremony the guests would then attend the important "tree-planting." Great care was then taken that the roots should not be broken and that the tree was most care-

[Continued on page 384]



THE "WEDDING TREE" OF SIR WILLIAM AND LADY BURNABY, ON THE GROUNDS OF THE HOTEL BERMUDIANA



THE STAGE, WITH ITS DRAWN CURTAIN OF CHURNING FOG

The Fight for Bright Angel Trail

BY THE EDITOR

WHO owns Bright Angel Trail, the most famous and one of the most picturesque mountain trails in America?

To this question nine out of ten readers will probably reply, "The Government, of course, for is not Bright Angel Trail the main footpath into the heart of the Grand Canyon of the Colorado River; and is not the Grand Canyon one of our greatest national parks?" The logic of this reply is good, but, as this instance proves, fact does not always follow logic. Bright Angel Trail does not belong to the Federal Government. It is owned by Coconino County, of the sovereign State of Arizona, and, such being the case, Coconino County exacts a toll of \$1 from every Grand Canyon visitor who astride a sleepy burro elects to descend its tortuous and awe-inspiring course.

The proposal that this trail be bought by the Federal Government was recently injected into the deliberations of Congress. To the average citizen, who feels proud that he is part owner of the Grand Canyon National Park, it seems like a perfectly obvious and desirable course of action, but in the hands of Congress it proved otherwise. Indeed, the proposal popped the lid of a regular Pandora's Box, and brought forth for public airing an astounding controversy. Tales of bygone search for hidden wealth, of struggles for land that stands on edge, of high court decrees and alleged defiance of them, of governmental

delays, unexplained, of a parkhood that is not national parkhood in fee simple. The resulting controversy deadlocked the Senate and the House and has halted for weeks the progress of one of the Federal Government's largest fiscal measures, the appropriation bill for the Department of the Interior.

The story of Bright Angel Trail is a romance worthy of a novelist's pen. Its very name conjures with adventure, while the mighty canyon into whose depths it descends is the greatest wonderland of mystery and magic coloring which Nature has to offer. No trail in our national parks system is as widely known; none is traveled or looked upon by people from as many ends of the world. Why should it not be a National Park Trail, a titled part of the Grand Canyon National Park, instead of a "toll road"—a relic of medievalism, where the people of the nation must stop and pay tribute in order to descend by this route into their own wonderland?

That is the issue which has awakened canyon echoes in the halls of Congress, where they have been caught by that unerring antenna, *The Congressional Record*, and thus broadcast to all who may care to "listen in" with spectacles and patience; for the record is long, disjointed, jumping from one House to the other, quiescent for several day and then breaking out anew. In attempting to present the high lights of the controversy in a chronological story, one is therefore forced to excerpt the debates without

meticulous reference to dates or to the end of the Capitol in which they took place.

In February when the appropriation bill for the Department of the Interior, which carries the budget for the national parks, was under consideration by the House, the following amendment was offered by Representative Hayden, of Arizona, and adopted:

"For the purchase of the Bright Angel Toll Road and Trail, within the Grand Canyon National Park, Arizona, as contemplated by the 'Act to establish the Grand Canyon National Park, in the State of Arizona,' approved February 26, 1919, \$100,000, to be available until expended for payment to the county of Coconino, State of Arizona, for the construction, under the supervision of the National Park Service, of a road from Maine, Arizona, to the south boundary of the Grand Canyon National Park: *Provided*, That no part of such sum shall be expended until after the delivery of a good and sufficient deed by the proper authorities of said county conveying to the United States full and complete title to the said Bright Angel Toll Road and Trail, and acceptance thereof by the Secretary of the Interior."

The action proposed by these House members was in line with a provision of the act of Congress which established in 1919 the Grand Canyon National Park, and which read:

"... the Secretary of the Interior is hereby authorized to negotiate with the said county of Coconino for the purchase of said Bright Angel Toll Road and Trail and all rights therein, and report to Congress at as early a date as possible the terms upon which the property can be procured."

A recent letter from the Secretary of the Interior, read into the *Record* by Representative Cramton, points out the importance of the Government acquiring title to the Bright Angel Trail:

"The Bright Angel Toll Road and Trail, which descends the south wall of the canyon to the floor, lying some 4,300 feet below

the rim, starts within a few hundred yards of the terminus of the railroad and the end of the main public highway, which bring practically all the visitors to the south rim of the Grand Canyon. At this point there are also concentrated the hotels and camps available for the accommodation of the visitors and the administrative headquarters of the National Park Service that has charge, under the Interior Department, of the administration of the park. This trail is the only means of access into the canyon for 20 miles to the east, where the Grand View Trail is located, and 8 miles to the west, where the Hermit Trail is located. The trail has been privately owned, the present title, so far as can be ascertained, being duly vested in the county of Coconino, which adjoins the park on the south; and the above provision of law in the organic act creating the Grand Canyon National Park appears to recognize rights of



Courtesy of the National Park Service

THE CURTAIN IS LIFTED, AND BEHOLD THE GRAND CANYON OF THE COLORADO IN ALL THE GLORY OF ITS AWE-INSPIRING MAGNITUDE. INTO THE DEPTHS OF THIS WONDERLAND OF MARVELOUS COLORS AND TEMPLED EARTH, BRIGHT ANGEL TRAIL LEADS THE VISITOR TO THE GRAND CANYON NATIONAL PARK

the county of Coconino in said trail. The county has collected from the public operator a toll of \$1 for every visitor carried on horse or mule back over the trail, it being understood that tolls for some 7,681 visitors were paid for such use of the trail the past year.

"The great importance to the United States of having ownership of this trail for the unrestricted use of the public is apparent, and the importance of its acquisition was fully emphasized by the injunction of Congress in the organic act above cited."



Kolb Brothers

A REMARKABLE PICTURE, SHOWING HOW THE CABLE FOR THE SUSPENSION BRIDGE WAS CARRIED DOWN THE BRIGHT ANGEL TRAIL. THE TWO ENDS WERE LOADED ON MULES AND FIFTEEN MEN WALKED BETWEEN THEM, CARRYING SECTIONS OF THE CABLE

In explanation of this amendment, Representative Cramton, of Michigan, who is chairman of the House Subcommittee on National Parks, said:

"The Hayden amendment proposes to buy the Bright Angel Trail from the county of Coconino, paying \$100,000 therefor, that money to be expended upon the Grand Canyon from the Santa Fe Trail under direction of the National Park Service. By its enactment it is sought (1) to improve an approach road to the south rim or Arizona side of the Grand Canyon, (2) to eliminate private ownership of the Bright Angel Trail, (3) to conserve a cordial spirit of co-operation with Coconino County, and (4) to eliminate private interests that now by opposition, intrusion, hostility, and violence handicap and prevent proper development of the park for public use and safe enjoyment of the canyon by the public."

Events leading up to the proposed legislation were explained by Representative Cramton as follows:

"Accompanied by my colleague, the gentleman from Oklahoma [Mr. Carter], ranking minority member on the committee, I visited the Grand Canyon late in March, 1923. Saturday evening, March 31, we held an extended conference concerning this matter at the Hotel El Tovar. There were present the gentleman from Arizona [Mr. Hayden], Mr. W. C. Rittenhouse, and Mr. R. E. Taylor, members of the board of supervisors of Coconino County; Mr. J. B. Rickel, clerk of the board; and Mr. Frank Harrison, county

attorney. There were also present Mr. F. R. Goodman, state engineer of Arizona; Mr. F. C. Pooler, district forester; Mr. G. W. Kimball, forest supervisor; Mr. Horace M. Albright, superintendent of the Yellowstone National Park and field assistant to the Director of the National Park Service. The whole situation was thoroughly canvassed and resulted in a complete agreement on the part of all present that the program set forth in the Hayden amendment should, if possible, be carried out, Congress appropriating \$100,000 for improvement of the Maine approach road, to be available after proper deed of the Bright Angel Trail to the Government. Naturally Mr. Carter and



Photograph by El Tovar Studios, Courtesy National Park Service

THE COMPLETED SUSPENSION BRIDGE IN GRAND CANYON NATIONAL PARK, WHICH MAKES POSSIBLE INTERESTING TRAIL TRIPS "DOWN UNDER," WITH THE NEW PHANTOM RANCH AS HEADQUARTERS FOR A PEACEFUL NIGHT'S REST IN THE CANYON

myself were careful to state plainly to these gentlemen that we could bind no one but ourselves and could not speak for Congress. We did, however, indorse the program and promised to do what we could to carry it out. That we have done and are doing. Subsequent events and further consideration have only confirmed my judgment as to the propriety, wisdom, and necessity of this program.

"Sunday noon we met at lunch in Flagstaff 20 or 30 of the most influential citizens of Flagstaff, and the proposal contained in the Hayden amendment was indorsed by all."

When the bill, as passed by the House, was referred to the Senate, Senator Ralph H. Cameron, of Arizona, appeared before the committee having the bill in charge and succeeded in getting the amendment stricken out. On the floor of the Senate, Senator Ashurst, also of Arizona, opposed this action, declaring:

"In this amendment we are called upon to decide a question of national policy. A bill was introduced in the Senate in 1886 by

President Harrison, whilst he was a Senator, proposing to create the Grand Canyon National Park, but it never became a law. In 1918 I introduced a bill creating the Grand Canyon National Park, and the able Representative from Arizona, Mr. Hayden, introduced in the other branch of Congress a similar bill.

"The Senate bill became a law and the Grand Canyon National Park now assumes the same status as the Yellowstone and other national parks. Long prior to the time the Grand Canyon became a national park, indeed long prior to the time the Grand Canyon became a national monument or a reserve of any kind or character, the laws of the Territory of Arizona authorized citizens of the United States to build, establish, and maintain a toll road for the collection of tolls from persons who traveled upon and over such trail or road. I can best give a history of the Bright Angel toll trail by reading a copy of a letter I wrote to the county attorney of Coconino County, Arizona, some time ago upon this subject."

Extracts from this letter are:

"About January 31, 1891, Peter D. Berry, under the statutes of Arizona of 1887, filed in the office of the county recorder of Yavapai County (Coconino County was created later) a certificate and plat marking out a sort of map of definite location of the Bright Angel Toll Road or Trail and claimed a toll road franchise thereon.

"Subsequently the said Berry, by deeds of conveyance, transferred, or attempted to transfer, his interest in said toll trail to Mr. Ralph H. Cameron; these deeds are recorded in book 9 of deeds and book 10 of deeds, records of Coconino County.

"In January, 1901, the board of supervisors of Coconino County attempted to extend said toll-road franchise for a period of 10 years, but had no power to extend same for a longer period than 5 years.

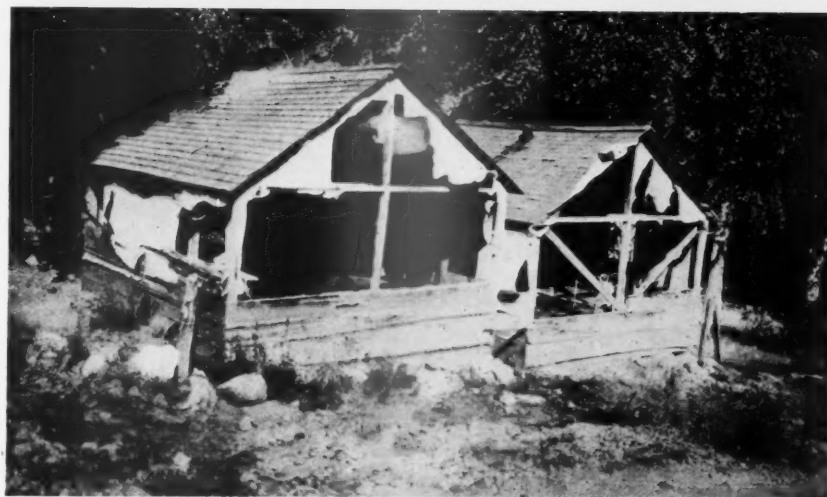
"In 1903 the district court of Coconino County, sitting at *nisi prius*, held the deeds to Cameron to be void, and Berry and his partners thereupon resumed possession of the Bright Angel Toll Trail.

"In February, 1906, the said toll-road franchise of Berry *et al.* expired, and the board of supervisors of Coconino County thereupon contracted with Mr. L. L. Ferrall to collect tolls thereon for Coconino County.

"In 1907 the territorial legislature, by act thereof, extended the franchise for an additional five years."

In 1912 this franchise expired, and since April of that year the county has been charging toll on the trail.

"I have a telegram, dated February 3 last," continued Senator Ashurst, "from Flagstaff, Arizona. Flagstaff is the county seat of the county of Coconino, the county in which is



THOUGH THE "CAMERON CLAIMS" AT INDIAN GARDENS HAVE BEEN DENIED BY THE HIGHEST COURT IN THE LAND, THESE DISREPUTABLE-LOOKING SHELTER TENTS AND SHANTIES STILL MAR THE BEAUTY OF AN OASIS WHICH SHOULD HOLD INSTEAD FACILITIES FOR THE COMFORT AND REST OF THE TRAVELER

located, the national park, and in which, of course, the trail is located, and which is, of course, the same county in which the road proposed to be constructed from the Santa Fe Trail to the Grand Canyon is located.

"FLAGSTAFF, ARIZ., February 3, 1924.

"Senator HENRY F. ASHURST,

"Washington, D. C.:

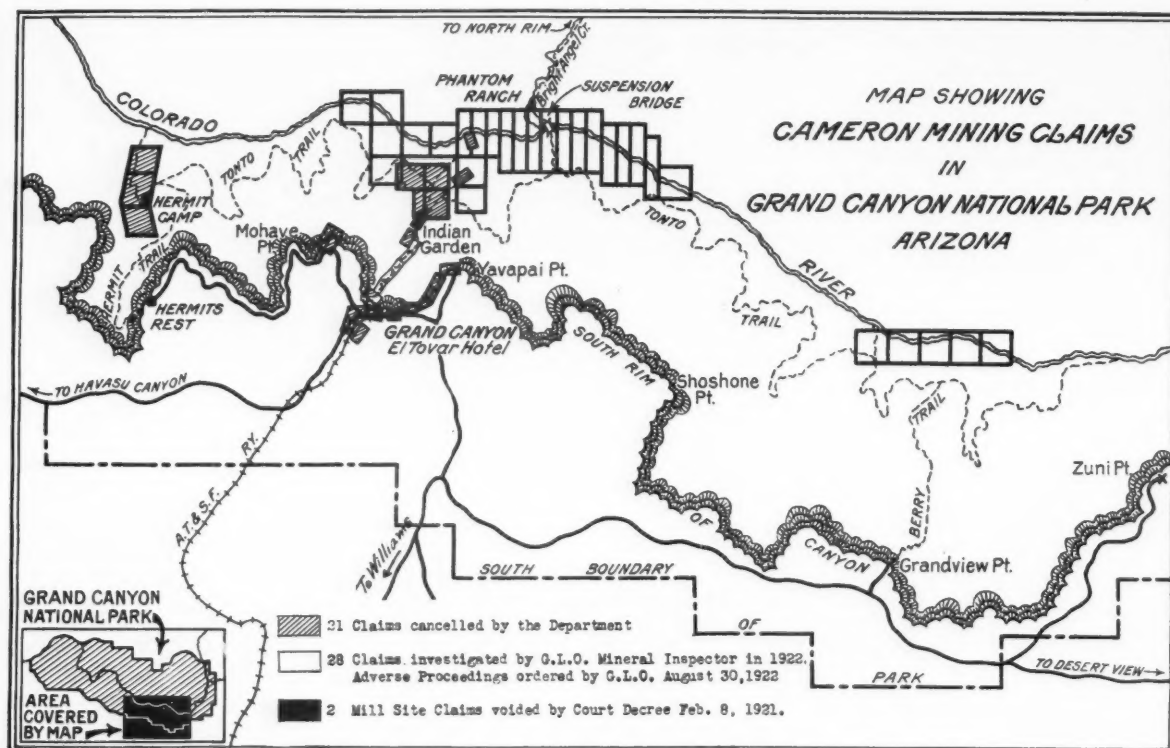
"We are advised appropriation for National Park Service to acquire Bright Angel Trail from Coconino County was voted into Interior Department bill as per agreement formulated last spring at Grand Canyon. Sentiment here practically unanimous for the sale of trail on basis previously agreed upon with Congressman Crampton. We civic bodies earnestly urge your support for Bright Angel Trail.

"(Signed) Flagstaff Rotary Club, by F. S. Breen, vice-president; Flagstaff Chamber of Commerce, by T. A. Riordan, presi-

provisions of this proposed sale to the Government of one of its greatest sources of revenue under the sham of a helping hand, because the Government has planned, which is its duty, the construction of a real road out of the forestry fund to the extent of \$750,000 within the next two or three years.

"It was my money, my energy, and my perseverance that resulted in the building of the Bright Angel Trail, and also the Grand View Trail, into the Grand Canyon, and made it possible for tourists not only of the United States, but from all over the world, to come and see the greatest scenic wonder yet discovered.

"The people of Coconino do not want the trail sold. The taxpayers have not been advised that the trail was to be sold, and I know of my own personal knowledge that if left to a vote the people of the county would vote overwhelmingly against the sale



dent; Babbitt Bros. Trading Co.; Arizona Lumber & Timber Co., by I. B. Koch, vice-president.

"I have briefly stated the facts. It occurs to me that if the county of Coconino is willing to sell the trail, we are called upon to consider an important national policy: Should the National Park belong to the Federal Government and the means of egress and ingress out of and into the park belong to some other authority? I believe that the same agency and the same authority which owns the National Park and has jurisdiction over the park should, for practical purposes, own the trails and road in it."

At this point Senator Cameron, of Arizona, formerly sheriff of Coconino County, entered the debate, vigorously opposing the purchase of the trail by the Government. The following are excerpts from his statements:

"My colleague [Mr. Ashurst] went into the details of the building of this trail, and I credit him with the best of motives in taking the position he now assumes, but I just want to state here and now, for the information of Senators who are present, so that they may know the facts as I shall develop them later, that Coconino County, with 65 per cent of its public domain withdrawn by act of Congress, presidential proclamation, or otherwise, is being robbed under the

of this trail. It has never been voted upon by the people, and I deny the authority for its sale as now contemplated.

"If the real story of park mismanagement were told the country would be shocked, and these statements I have made are in point because this is an instance where a national park controlled by corporations has been a bone of contention; they want full sway, so this unwarranted scheme was cooked up in order to wrest the control of this trail and get the revenue from Coconino County. Why? Because it meant greater profits to them.

"I want to say again to the Senate that a great many years ago I built the Bright Angel Trail and also blazed the wagon roads into what is now the Grand Canyon National Park and around the rim for mining purposes. I will further state that for 13 years my associates and I packed ore out of the Grand Canyon and hauled it from the south rim of the Grand Canyon to Flagstaff and shipped it to the nearest smelter at that time, at El Paso, something like a thousand miles away.

"I did not go into the Grand Canyon for the purpose of exploring it for a tourist proposition. I went there to seek a fortune, which all prospectors expect to make. I put my hard-earned money into the canyon mines, developed the trails, developed the wagon roads,

[Continued on page 374]



Camp-fire Stories

By

Forest Rangers

Storm Gods of the Holy Cross

BY L. C. SHOEMAKER

"FOR a chunk of country that's rough and rugged and shot full of high-test static, so to speak, I will lay my hat on the Aspen District of the Holy Cross National Forest," said the old ranger from Colorado, as he threw himself on his horse blanket and stretched his wet boots to the camp fire.

"High-test static. Spell it out," said the young ranger from California.

"Thunder and lightning," replied the other dryly. "More of it to the square mile in Holy Cross than liars' sunshine in all of California. Now Aspen District lies, or rather is lodged, in the southeast corner of Pitkin County. It is bounded on the east by the Continental Divide and on the south by the Elk Mountain range. With such neighbors, it's just naturally rough and wild by heredity—high ridges; rugged ranges, and deep canyons crowding in on one another like they had stampeded once and then were suddenly struck cold by lightning."

The old ranger paused to unlace a tight shoe. Then continued: "Speaking of lightning,"—

"Ain't no one spoke of it but you," said the California ranger.

"That's aplenty," replied the older man. "Speaking of lightning, I say, the Aspen District of the Holy Cross is a sure enough holy terror. Seems like forest rangers have enough dangers to worry about without having to learn how to dodge lightning bolts. There's forest fires and floods, fights with trespassers, game poachers, cattle men, encounters with wild animals and mean horses, which we

just set down as ordinary risks. These ain't nothing much to worry about, because the average ranger who ain't bone formation from the ears up is able to apply certain lines of reasoning that lessen these dangers. But as for lightning, the case is a heap different, because no amount of reasoning is going to bend a lightning bolt, leastwise not the kind native to the Aspen District.

"I am speaking from right smart experience. For five years I had charge of this Aspen District of the Holy Cross, patrolling for forest fires, supervising the grazing of sheep, marking and scaling timber, constructing trails, and the like. I learned mighty quickly that a man could freeze to death in August in these higher elevations, so summer never caught me without a heavy coat and a rain-proof slicker. Many a time I felt the temperature of a sultry July day do a flip-flop to the freezing weather of December in an hour.

"But I'm sort of getting away from lightning. I was about to say that it killed me stone dead five years ago, but that would cast discredit on what I'm about to tell you, every word of which is gospel truth. It was an encounter with a storm god that took me to the very gateway of that canyon whence no ranger returns. I recollect the date well—July 8, 1919. I had ridden from Aspen, my headquarters, to near the head of Lost Man Creek, twenty-one miles distant, to select a trail route I was building around some swamps. At about 6 o'clock in the evening, having finished my temporary blazing, I turned back to my camp, a deserted ranger station cabin, four and

[Continued on page 383]

Alcohol Via the Wood Route

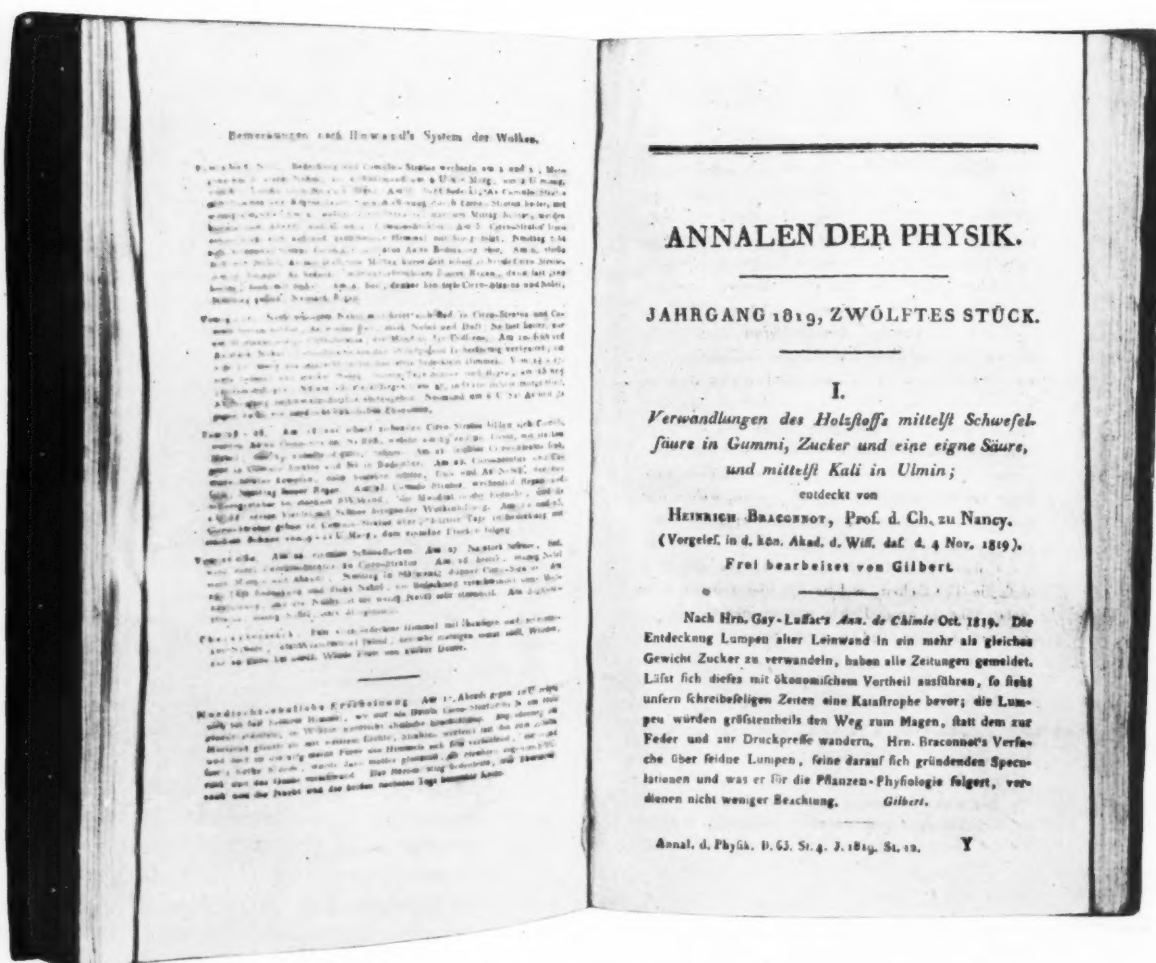
Will the Little Experiment of an Old French Chemist, Made One Hundred Years Ago, Lead to the Forest as a Possible Source of Fuel for the Modern Motorist?

By LOUIS E. WISE

OVER a hundred years ago, well before Chemistry had the right to call herself an exact science, a jovial professor at the University of Nancy performed a classical little experiment that was to have a far-reaching effect on civilization. Monsieur le Docteur Braconnot mixed some wood with oil of vitriol (alias sulphuric acid) and converted the vegetable fiber into a simple sugar. The French scientist followed up this experiment with similar ones, using purified linen rags—so widely used at that time in the making of paper—and

found that he could produce the same sugar from linen that he had obtained from wood. Altogether, M. Braconnot's findings were of some interest, and we have a mental picture of the jocular Frenchman telling his learned colleagues at the Academy all about them. We can almost hear him concluding his report somewhat in this vein:

"If I should inform people who haven't much to do with chemical flights that a pound of linen could be converted into more than a pound of sugar, they would certainly be amused and would probably poke fun at me."



IN 1819 DR. BRACONNOT'S FAMOUS EXPERIMENT WAS GIVEN WIDE PUBLICITY IN EUROPEAN PERIODICALS. IN THE ABOVE GERMAN MAGAZINE THE EDITOR PESSIMISTICALLY REMARKS, "A CATASTROPHE MAY AWAIT US. RAW MATERIAL MEANT FOR THE PRINTING PRESS MAY WELL FIND ITS WAY INTO OUR STOMACHS"

Braconnot had certainly hit the truth. A pound of carefully purified cellulose, whether it came from rags or from wood, was *theoretically* capable of yielding more than a pound of a simple sugar. Not the sugar of the sugar cane, or the sugar beet, or the sap of the maple tree, but a sugar identical with that obtained from the grape, and by the acid treatment of corn and potato starch—the sugar commonly known as *glucose*.

Notwithstanding the fact that these experiments were made long ago, the newspapers of the time gave them considerable publicity. Why shouldn't they? Linen was their own particular raw material, and heaven knows it was scarce enough at the time. Along comes a French prestidigitator who changes it into an edible sugar! What must become of the honest literary hack, deprived of his writing materials, with nothing left to do but to *eat* them in his despair! The same rebuke might have come just as aptly forty or fifty years later, when paper was being made from wood. Couldn't the methods of the uncanny Braconnot convert *that* into a sugar, too!

The successors of the French scientist felt, however, that he had discovered a bonanza. He had shown the possibility of changing wood waste into a sugar that was not only *edible*, but *fermentable* as well. Hence they reasoned, wood waste would become the precursor of industrial alcohol, not the poisonous "wood" alcohol, but the immensely useful and potable ethyl, or "grain," alcohol, which they knew could be so readily obtained by the fermentation of glucose. Everything was apparently very simple, and there was a fortune in the offing.

But the would-be technologists soon found themselves

in all kinds of trouble. On closer scrutiny they discovered that Braconnot's method required relatively enormous amounts of sulphuric acid, which they could not recover. The yields of sugar were far from satisfactory, and the diffi-

culties encountered in the fermentation turned their hair gray. So they floundered about for almost a century. True, in 1855, a technologist by the name of Melsens suggested a modification that helped to cut down the acid consumption. He heated the wood with dilute acid in autoclaves, under pressure. The yields of sugar and alcohol rose, and with them rose the stock of the Braconnot method; but it was not until the 20th century, when all the old-line promoters were dead and gone, and long after the jolly Frenchman had been gathered to his fathers, that the problem received the study which it really deserved.

The old-timers, who had tried to gain a short cut to industrial alcohol via the wood route, had overlooked a number of very important facts. Knowing that glucose and other sugars closely resembling glucose could be readily fermented, they worked like Trojans to increase their sugar yields. To their chagrin, they often found that an increased yield of *sugar* did not necessarily mean an increased yield of *alcohol*. Glucose was by no means the only carbohydrate obtained from wood wastes, and some of the other sugars (which the modern chemists now call the "pentose" sugars and which the older chemists didn't recognize at all)

dared and defied all comers to ferment them to alcohol.

Furthermore, the acid treatment which transformed wood into sugar, if prolonged a bit, was instrumental in destroying some of the fermentable sugars themselves.



Courtesy of U. S. Forest Service

THESE GIANT LARCHES OF MONTANA HARDLY RESEMBLE POTENTIAL "MOONSHINERS," YET THEIR WOOD IS CAPABLE OF YIELDING AS MUCH AS FORTY GALLONS TO THE TON. COMPARE THEM TO THE PURITANICAL HARDWOODS THAT YIELD A MERE TEN GALLONS UNDER SIMILAR TREATMENT

Finally, the best conditions for the actual fermentation had been guessed at rather than investigated, and the yeasts were often completely ignored. Hence the alcohol yields frequently were much below par and fluctuated widely in different experiments. What wonder, then, that different chemists obtained very conflicting results, and that the scientific data and patents which cluttered up the literature on this phase of forest utilization became sadly in need of an interpreter, critic, and guide.

Two years ago the Forest Service issued a technical publication that straightened out many of the kinks in the wood-sugar-alcohol tangle. This booklet discussed the best methods available for converting wood waste into ethyl alcohol, the yields that might reasonably be expected from different species of wood, the machinery and equipment used in actual operations (as well as their cost), and the difficulties that must be faced or guarded against in establishing the process industrially.

As an example, it was clearly demonstrated that the conifers like longleaf pine and white spruce were much more liberal in yielding alcohol than were the hardwoods, like maple or red oak. The former could be trusted to average well over twenty gallons per ton of dry wood, while the latter, under similar conditions, gave a fluctuating yield—often a paltry ten gallons or less. This difference was due largely to the presence of those prohibitionists—the unfermentable pentose sugars, which were formed in appreciable quantity from hardwoods during the process. While the alcohol yields from the hardwoods were relatively low, the treatment with acid furnished very fair amounts of acetic acid, which might in time develop into an important compensating by-product. Western larch, on later investigation, proved potentially the greatest bootlegger of them all. If properly coaxed, it could furnish as much as forty gallons of ethyl alcohol per ton of wood.

These results came from the painstaking and intensive researches of a few scientists in the Forest Products Laboratory, and from the experience of a few courageous and efficient industrial pioneers. Their combined efforts proved that if we had assurance of a uniform and constant supply of mill waste, a goodly and easily accessible supply of suitable water, acid, and lime, and efficient organization, and a well-designed plant, ethyl alcohol production from wood would be a commercial success.

The question naturally arises: What has all this to do with the future of the automobile industry? About three years or more ago a group of foresters, chemists, and engineers met in Rochester, N. Y., and discussed the problem of the liquid fuel supply. At that time things looked pretty black for the gasoline producers, some of whom prophesied gas at forty or forty-five cents a gallon. Of course, that was before the discovery of the new temporary sources of petroleum that brought gas tumbling down to nine cents a gallon in some parts of the country. These men felt that something must be done about the apparently dwindling petroleum resources, and so they discussed at length the possibilities of obtaining future substitutes for gasoline, for which there would be an

ample and constant source of supply. They felt that the energy emanating from the sun, familiarly known as solar energy, which was responsible for the growth of plant life, might be called upon to solve their problem. If the growth of wood in the tropical plants were sufficiently rapid, and if this wood could be economically converted into ethyl alcohol, their worries might at least be alleviated. Ethyl alcohol undoubtedly could serve as a motor fuel, and theoretically the source of supply would be limitless. Certainly, the tropical forests grew fast enough; but past that point the discussion proved rather an academic one. A vast amount of experimentation and numberless economic studies would have to precede any accurate general statements regarding the conversion of the plants of the tropics into alcohol.

The same group of scientists also considered the feasibility of using wood wastes, present and future, in the United States. A rough-and-ready reckoning indicated that from all sources we should have available a total of some eleven billion cubic feet of all kinds of wood that might conceivably be grown and used annually for the production of "grain" alcohol—a woodpile sufficient to produce annually $2\frac{1}{2}$ billion gallons of alcohol! How our old friend Braconnot would have stared at these figures. Perhaps the reader will also be carried away by such speculations. He should remember that our scientists were just surveying the field. Perhaps it isn't quite fair to them to quote their figures.

Whatever the future will do for the automotive industry and its motor fuel, we have evidence that it may be helped by the neat little trick turned by M. Braconnot in his crude laboratory at Nancy in the year 1819.

GOOD TIMBER

THE tree that never had to fight
 For sun and sky and air and light;
 That stood out in the open plain,
 And always got its share of rain,
 Never became a forest king,
 But lived and died a scrubby thing.
 The man who never had to toil,
 Who never had to win his share
 Of sun and sky and light and air,
 Never became a manly man,
 But lived and died as he began.
 Good timber does not grow in ease;
 The stronger wind, the tougher trees;
 The farther sky, the greater length;
 The more the storm, the more the strength;
 By sun and cold, by rain and snows,
 In tree or man, good timber grows.
 Where thickest stands the forest growth
 We find the patriarchs of both,
 And they hold converse with the stars
 Whose broken branches show the scars
 Of many winds and much of strife—
 This is the common law of life.

—Anon.

(Taken from Aug. 11, 1923, issue "Naval Stores Review"
 W. T. Anderson in Macon Telegraph.)

(Taken from Aug. 11, 1923, issue "Naval Stores Review"
 W. T. Anderson in Macon Telegraph.)

[illegible][illegible]

W. R. Matson, a government forester, pointed out a pine land near Macon. He measured some of the stumps estimated that the owner had needlessly wasted over a foot of the best timber on his land by allowing the stumps to grow four feet high. He said the stumps should have been cut down at once.

—McDuffie (Ga.) Progress

An acre well set with pines is now growing from 300 to 400 board feet of timber every year. Timber makes no noise about growing but it grows rapidly in Southern Alabama. An acre of well set pine will make the owner a profit of \$1.00 to \$3.00 yearly, or more than an investment in U. S. Bonds. Timber brings good money

By requiring your timber to be cut rightly, leaving the young timber, and protecting your lands from fire, Covington County can grow and cut a crop of 50 to 75 million board feet of timber yearly, and bring into the county more than a million dollars a year in perpetuity.

JACKSON LUMBER COMPANY
LOCKHART, ALABAMA

By W. R. Mattoon

By W. R. Mattson

In scores of counties in middle South Carolina and Georgia the burning of opium, the chugging of steam locomotives over the kinds and grades of hauling water-drawn mules over and down the hills and the perching of the industrial revolution on the rails of the railroad came was formerly the largest and prosperous of the three cotton-growing regions, from the Carolinas to Alabama, closed the period of the cotton boom. In 1880 and 1922 in the Piedmont region, from the Carolinas to Alabama, closed the period of the cotton boom. In 1880 and 1922 in the Piedmont region, from the Carolinas to Alabama, closed the period of the cotton boom.

"It is timber that kept us from starvation," said an old-timer. "Timber is what's kept us from starvation," said an old-timer. "Timber is what's kept us from starvation," said an old-timer. "Timber is what's kept us from starvation," said an old-timer.

It is timber that kept us from starvation," said an elderly Alabamian, changed the picture of the farmer to the lumberman. Alabama, changed the picture of the farmer to the lumberman. Alabama, changed the picture of the farmer to the lumberman. Alabama, changed the picture of the farmer to the lumberman.

Unwise cutting and waste are everywhere—high stumps and large tops left in the woods, big slash piles and careless burning resulting in huge shaving piles lack of knowledge of timber values, between the almost complete lack of knowledge of timber values on the part of the farm owners—mostly men and women who have tenanted their lands to negroes.

IT DESTROYS THE TIMBER
IT DRIES UP THE STREAMS
IT DRIVES AWAY WILD LIFE
IT LEAVES IN ITS WAKE RUIN AND DESO-
LATION

A LIGHTED MATCH-CIGAR-OR CIGARETTE BUTT, CARELESSLY THROWN TO ONESIDE IN THE WOODS MAY START A

THE photographic reproductions shown on this page tell in part the story of how one lumber company has undertaken to do its part in educating the people of this section to the value and need of keeping forests growing on forest lands. The company is the Jackson Lumber Company, Lockhart, Alabama, and it has selected the medium of the local press to reach the people of the county and the state in which it is located. Beginning with December last, the company has published every week, in the daily papers, educational information of the character shown by that reproduced herewith, with the idea of stimulating local communities to appreciate the value of keeping surrounding forest lands green with forests.

The initial announcement of the company stated:

"We have purchased this space in our daily county newspaper with the object, primarily, of awakening the owners of farm lands and timber lands particularly, as well as the public generally, to a realization of the possibilities for income and profit from one of Nature's greatest gifts to man—THE FORESTS. . . .

"Now, some of you are going to say right off the bat, 'What's the use of paying any attention to what the Jackson Lumber Company says? It's only some kind of propaganda they're getting out. There's a nigger in the woodpile somewhere.' Yes; you're right.

"We hope to prove to you the utter and absolute folly of setting fire to the woods; that it amounts to exactly the same thing as setting fire to a pile of paper dollars. It's gone up in smoke. You can't cash that paper money and we can't cash our timber when it's burned."

The action of the Jackson Lumber Company is an outstanding example of the possibilities of educational work open to the lumbermen of the United States. Scarcely a county in the forest regions of the United States but contains one or more substantial lumber company, whose continuous operations are dependent upon a public sentiment which will keep forests growing on lands tributary to their mills. If one company in every forest county of the United States were carrying forward an educational program of this kind, what a mighty force it would be in welding public sentiment for forest protection and forest reconstruction. It costs money, to be sure; but the amount is relatively insignificant compared with other current expenditures, and it would in the long run be one of the most valuable expenditures, under the head of "Maintenance of Operation," that the industry could make.

STOCK SUFFERING AND FORESTS BEING
DESTROYED BY FIRES

STOCK SUFFERING AND FORESTS BEING DESTROYED BY FIRES

In the United States, even more than in Canada, we are today seeing more the effects of an appalling devastation, extensive tracts of land in Michigan are outstanding examples of complete destruction of timber and forage crops by fire.

Mr. James C. Woodward of that state says: Michigan is a particularly good state to look at in three days of forests and wild life simply because God intended it to be the greatest water, forest and wild life paradise on the American continent. No other state was so completely endowed with all things or so richly stored with possibilities at the beginning. Its wild life and forest resource have been worth billions and had they been protected, they would be worth billions today.

The tremendous loss which has occurred throughout the United States because of the lack of proper care by the states and the private owner is shown by conditions as they exist in Michigan. Because of timber slaughter and forest fire over one-third of Michigan is virtually bankrupt, paying no more in taxes than the cost of collecting the taxes, unable to build roads and schools and even unable to provide police protection."

The people of Alabama need to see the value of conservation and the need to protect our forests. The people of Michigan, Pennsylvania and Minnesota are paying today to partially restore their former resources. We must come to an understanding of what conservation means. We must realize that human life is absolutely dependent upon wild life and forest. Without these things we would become extinct as a race. If all vegetation, all wild life and all forests should disappear tomorrow, the human race would cease existing within a few days. We are absolutely dependent upon our stock and upon the forest lands for food for our stock and wood for our thousands

We are today raising thousands of head of poor hogs and cattle which could be fat. What is the trouble? We thoughtlessly burn our lands which destroys their feed. Thousands of grasses and herbs now almost extinct and thousands of worms which are of utmost value to hogs would come back bounteously, if we stop our ruthless burning. Let's agree to stop fire—we want a little timber growing in our farm lots—we want our hogs and cattle to be fat and so does the other fellow

WILSON LUMBER COMPANY

One-third of the forest-growing lands of the United States is at the farmer's back door. In ten, twenty, oftentimes one hundred-acre tracts and more, the farm part, oftentimes one-half acre every farm unit of the nation, are the great tree crop-bearing 168 million acres of the nation. The near part they comprise improved farm land in the United States. Here is soil sufficient to form a mighty empire, an area equivalent to one-third the total of the forested lands of the United States. Here is soil sufficient to make needed crops of the nation—wood.

What are the agricultural possibilities about this portion of the forest? They are as numerous as the trees themselves. They are as varied as the uses of the forest products. They are as important as the forest itself.

[illegible]

Today the farm woodlands are not rendering a service commensurate with the acreage involved. The farmer, who is not adequately diversified, has no insurance which is not under his control. He has no information about the timber area of the United States, and the quarter of the country in which he lives. He has no information about the national forest lands, and he is inclined to ignore the problem or consider forestry as a minor sideline.

...the farmer
can grow forest crops according
to the tax. When will the agricultural col-
laborators and shoulder their obligation?

... COMPANY

That spectacular side of forest fires—the sweeping fires that devour whole forests, wipe out towns, and destroy human life—are pretty well known to the public. But the more common, less conspicuous side of forest fires—the fires that burn in the brush and need to be known. In the process of burning, they destroy the forest's natural enemies, the insects and diseases that keep the forest healthy.

That spectacular side of forest fires—the sweeping fires that devour whole forests, wipe out towns, and destroy human life—are pretty well known to the public. But there is a humdrum, inconspicuous side of forest fires that the public does not know, and needs to know. In many respects it is the worst of all, the present forest problem.

We refer to the destruction of young trees and tree seed by forest fires. Foresters, lawyers and timberland owners often bicker as to the value of young forest growth, or indeed whether it has any value. Elaborate mathematical formulas have been invented for trying to determine the value of young forest trees. But isn't the

But isn't the problem, after all, very simple? Here is fire, pouring on an immense scale the young forests on which we depend for our future forests. Here is an immense and growing demand for timber. The two things don't jibe. We are losing timber by burning up the second crop as soon as it is destroying our potential forests. At \$100 a cord, that's over every \$400 million worth of potential forests. At \$100 a cord, that's over every \$400 million worth of potential forests. At \$100 a cord, that's over every \$400 million worth of potential forests.

What actually happens is that great areas are swept by fire every few years, until they are completely devastated—devoted to growth and tree seed. Already more than one-sixth of our forest area is reduced to this tragic condition. Fire is the enemy that has brought this about—fire, the evil shadow of our lumbering and the fruit of American "careless" destruction. It is bad enough to burn—

to lose a stick of it, but it is far worse to permit this
of nature are hulled and brought to naught by this yearly
negligence.

LOCKHART, ALABAMA

So serious has grown the supply that it is not apparent in the

(Taken From June 30, 1923, Issue, "Naval Stores Review")

So serious has grown the peril in the fast-decreasing supply that industrial interests which once were not opposed to conservation laws, which once were in favor of such measures. Lumbermen, now universal advocates of well considered forestry practices, are now turning their backs upon the forests.

...the fast-decreasing tim-
ing once were indifferent
Lumbermen are among the prompt adop-
ers of well considered plans for protecting and
are heartily supported by the especially
at the recent national convention, by watchful
Institute, Mr. C. H. Sher-
that body, declared:

"Stop the slaughtering
too small to
no economic

...the slaughtering of the forests by felling
is too small to develop merchantable timber. If
such economical ways in bringing in six-inch and
leave them growing for the succeeding
this is the surest, quickest, and cheapest
solution."

purpose speaks the National Lumber Manu-
facturers and tax-payers, state
problem as a consequence

...and tax-payers, the lumbermen want
the problem settled now while it can be
comparatively small expense, and not
the forest conditions will perhaps in-
crease the necessity for more drastic in-
expensive action to achieve the
can be achieved simply
assent to the

ment to the forest administration

JACKSON LUMBER COMPANY

The Fight For Bright Angel Trail

[Continued from page 368]

and helped promote what is now the only railroad there, which extends from Williams, Arizona, the main line of the Santa Fe, into the Grand Canyon National Park.

"This trail is a great asset of Coconino County. A few months ago a little clique got together out at Flagstaff, without the knowledge of the people of Flagstaff, without the knowledge of the people of the county, and in crafty maneuvering made this deal and now want us to swallow it. Why has a Congressman a right to go out and make a private deal with a board of supervisors, even if they—the supervisors—had the right to make this deal? The board of supervisors of Coconino County have no more right to sell an asset of the county until it is voted on by the people of that county than I have to try to sell the United States Capitol. Here is a Congressman, who is chairman of the subcommittee of the Committee on Appropriations of the House [Mr. Cramton], and my friend from Arizona [Mr. Carl Hayden], who is now and for many years has been Representative from our state, making a deal of the assets of the county when they knew, or should have known, that \$100,000 would do but very little good on this road, and at the same time they knew the forestry department planned spending \$750,000 on this same road. I do not know whether these gentlemen understand the situation or not, but before they go into a deal of that kind they should know that there should be some justification and merit to the proposition.

"Mr. BROOKHART: I should like to ask the Senator if the value of this asset which he describes as belonging to this county does not really come from the people of the United States. My idea is that it naturally belongs to the people of the United States.

"Mr. CAMERON: This trail belongs to Coconino County and Coconino County is maintaining it and keeping it up in first-class condition.

"Mr. BROOKHART: Nobody is trying to get it away from the county without paying for it. . . . but my thought is that the Grand Canyon of the Colorado belongs to the people of the United States; that the people of the United States are entitled to have an approach to it, and if that approach is owned by a county, or a private party, whoever it may be, they are entitled to acquire it, and to have it taken by condemnation if necessary.

"Mr. CAMERON: The Senator has always taken a position, as I understand, for the protection of the people. That is what I am trying to do here today, namely, to protect the taxpayers of the state and county in which I live.

"Mr. BROOKHART: But my idea is to protect 110,000,000 Americans and not merely one county.

"Mr. CAMERON: I am talking about the world. I made it possible for the greatest scenic wonder in the world to be visited for the first time. But for my energy the scenic wonders of the Grand Canyon would have been unknown until many years later. Very few people went there so long as there was only a stage line. I sat in the Grand Canyon hotel in Williams with Bucky O'Neill four days trying to figure out how to build a railroad from Williams to the Grand Canyon, and put up the first \$500 to send Bucky O'Neill, who lost his life in the Spanish-American War, to pave the way to construct that railroad.

"Mr. BROOKHART: I am very much delighted to know the history of the Grand Canyon, and I think that is all right, but I see nothing to prevent the county from charging \$10, or \$15, or \$20, if they want to charge it.

"Mr. CAMERON: My claim is that it will be cheaper for the people at large to have this trail remain where it now is. As I have said before, this inlet to the greatest scenic wonder in the world will never get into the hands of monopoly if it is controlled by the county and the taxpayers and voters have a chance to vote on it."

Following the conference with the county board of supervisors in March, 1923, referred to by Representative Cramton, sentiment on the part of the board with respect to the proposed sale of the trail seems to have undergone a change, for on March 15 Senator Cameron told the Senate:

"By the following evidence it will be seen that the county of Coconino, Arizona, does not desire to sell the Bright Angel Trail. On March 14, 1924, the board of supervisors of Coconino County,

by unanimous vote, passed a resolution opposing the sale of the trail as provided under this item.

"I have here a telegram from Williams, Arizona, which I wish to read into the *Record*:

"WILLIAMS, ARIZ., March 15, 1924.

"Senator RALPH H. CAMERON,

"Washington, D. C.:

"Board of supervisors in meeting March 10 unanimously declared themselves opposed to sale of Bright Angel Trail as outlined in Hayden bill.

"W. C. RITTENHOUSE,

"Chairman Board of Supervisors, Coconino County."

Some of Senator Cameron's statements apparently aroused the ire of Representative Cramton, for during the following days the latter delivered in the House some enlightening speeches bearing upon Senator Cameron's personal mining activities and interests in the Grand Canyon. The following paragraphs are quoted from Representative Cramton's speeches:

"Proper development of the park has been thwarted by private interests, enjoyment of the park by the public is actually made hazardous by private interests, trespassers on the public domain, whose claims have been overruled by the Supreme Court of the United States, but who presume upon circumstances and plank themselves in the path of progress, veritable dogs in the manger, snapping and snarling at the National Government and endangering every park visitor who goes over the Bright Angel Trail.

"These obstacles in the way of progress are, briefly speaking, the Cameron claims.

"I had heard something of the situation and in response to my request the Secretary of the Interior gave me the following statement nearly two years ago:

"WASHINGTON, April 4, 1922.

"I have before me your letter of March 27, addressed to Director Mather, of the National Park Service, in which you state that you understand that there has been in the past some controversy or disagreement between the Interior Department and Mr. Cameron, of Arizona, involving some of the lands now included within the Grand Canyon National Park, and that you would like to have a statement of what the records of the department show as to the nature and outcome of such controversies. In reply I have to advise you relative to the so-called Cameron mining claims within the Grand Canyon National Park as follows:

"The area which is now within the Grand Canyon National Park has been reserved to the Federal Government since February 20, 1893; first, as part of the Grand Canyon forest reserve, and later, since January 11, 1908, all but a minor part of it has been within the Grand Canyon National Monument established by proclamation of the President under the act of June 8, 1906. The inclusion of the area in the forest reserve withdrew it from the operation of the public land laws other than the mineral land law, and its inclusion in the national monument withdrew it from application of the mineral land law. The presidential proclamation creating the national monument, however, provided that the withdrawal of the area for national monument purposes should be subject to all "valid" claims theretofore acquired.

"The Grand Canyon National Park as now constituted, with an area of 958 square miles, was established by act of Congress of February 26, 1919. Section 4 of that act protected all valid existing claims and also recognized the right and authority of the county of Coconino over the Bright Angel Toll Road and Trail.

"Records furnished by the United States Forest Service, which administered the area both as a national forest and a national monument, show that Ralph H. Cameron and his associates asserted right to at least 81 so-called mining claims in that area, and from other records there appear to be even additional locations claimed by Cameron. Whether he is still asserting the right to such additional claims can only be determined from county and state records, since it is only when application for patent is made that such cases come before the Interior Department. However, in regard to the claims of record, these appear to include lode, placer, and mill-site claims, claimed under the mining laws. The attached

map will show the location of claims of record in this department with relation to existing structures on the south rim and also to the Bright Angel Trail, which is the principal trail leading into the depth of the canyon from the south rim and trails within the canyon. It will be seen that these claims were strategically located with reference to proposed and probable development of the canyon as a tourist attraction.

"The Cameron mining claims were first brought to the attention of the department on May 17, 1905, when Cameron *et al.* filed application for patent for the Golden Eagle and Cape Horn lode mining claims, which are located on the south rim directly west of the El Tovar Hotel. Adverse claims and protest, alleging, among other things, that the claims were not located upon mineral land, were filed with the Commissioner of the General Land Office. On May 24, 1905, Cameron and his associates also applied for a patent for the Magician and Wizard lode claims and the Alder and Willow mill sites. Protest again was filed against issue of patent. After hearings and rehearings before the Department of the Interior granted the applicant, and after investigation of the claims by mineral inspectors of the General Land Office, the applications for patent were denied and the claims declared invalid and canceled by departmental decisions of February 11, 1900, and November 29, 1911.

"After, and notwithstanding, these decisions, Cameron and his associates asserted exclusive right to possession and enjoyment of the claims as if they were valid, and on September 18, 1915, the United States filed a suit, Equity No. 10, in the United States Court for the District of Arizona, to enjoin Cameron and others from occupying, using for business purposes, asserting any right to, or interfering with the public use of the lands involved in the Cape Horn claim, and to require removal of buildings and refuse therefrom.

"A decree in favor of the United States was affirmed in the circuit court of appeals; thereupon the case was taken to the United States Supreme Court, and the decision of the circuit court of appeals was affirmed by that court on April 19, 1920, upholding the right of the Secretary of the Interior in the public interest to inquire into and determine the validity of mining locations, and if found invalid to declare them null and void.

"On June 5, 1916, a like suit was instituted in the United States District Court for Arizona covering the Alder and Willow mill sites, located in the Grand Canyon. This suit, known as Equity No. 16, was continued pending the outcome of the first suit. By stipulation a like decree was rendered February 8, 1921, and Cameron and others were enjoined from the use of said sites and required within 60 days to remove therefrom all buildings, structures, and improvements, and "that this court retain jurisdiction over this cause for such further orders as may appear proper."

"These court orders have not been complied with. In spite of the decisions of the department and the decisions of the courts, various structures are now being maintained by Cameron and others on the Cape Horn claim and Alder and Willow mill sites, he alleging an agreement with Coconino County regarding the use of the buildings, which he claims to be on the trail right of way. Our records indicate the structures to be off the right of way."

The map reproduced on page 368 shows the claims located by Senator Cameron in the Grand Canyon.

"I call your attention to the map which I have placed in front of the desk. Here is a map of the Grand Canyon, and here, marked in red, are

the original 21 claims that have been pronounced worthless by the Supreme Court of the United States. Originally they restricted all development here upon the south rim itself, and here they crossed the Bright Angel Trail. Here is Indian Gardens, that I will speak of later on in my remarks, a lovely place, where springs arise and cottonwood trees grow. It is a delightful place. If you have not been accustomed to riding, or even if you have been, by the time you have made the descent from the rim to Indian Gardens you will want to get off the mule to rest a little while and get some cool water to drink and a chance to eat your lunch in comfort. But all these purposes are frustrated because, in the face of a decision of the United States Supreme Court, Cameron still occupies a strategic point here on the Bright Angel Trail. These colored spaces on the map (indicating) represent 28 claims that I shall refer to which have been pronounced worthless, and there is no doubt as to their invalidity. Those areas in purple represent a general smattering of platinum claims located in 1919, after the law had precisely provided that no claim could possibly be filed. The river is running through here, and wherever there could be a trail or a comfort station or a rest booth provided, these invalid claims, these makeshift claims, were in the way of public development."

"Under date of February 2, 1924, I called the Cameron case to the attention of the Secretary of the Interior in the following letter:

"FEBRUARY 2, 1924.

"Hon. HUBERT WORK,

"Secretary of the Interior, Washington, D. C.

"MY DEAR MR. SECRETARY: With reference to the rights asserted by Ralph Cameron in certain lands within the Grand Canyon National Park, I have noted the decision of the Supreme Court of the United States affirming the decree in favor of the Government, dispossessing Cameron of certain lands claimed by him that are highly essential to the proper development of the Grand Canyon National Park. Being under the impression that the matter of actual dispossession of Cameron was pending in the Department of Justice, I addressed an inquiry under date of January 18 to the Attorney General, asking what action had been taken by that department. In reply I have a letter, under date of January 25, from the Attorney General in which he recites the status of the litigation and then states:

"Since the entry of these decrees no further action has been taken by this department, nor has any further request been received from the Interior Department for action by us. I presume that if any additional proceedings by this department are desired request therefor will be made by the Secretary of the Interior, under whose supervision the Grand Canyon Park is administered."

"I will be glad to be advised as to the attitude of your department with reference to the unlawful retention of these lands by Mr. Cameron in the face of final action of the highest court, and is it to be expected that your office will call upon the Department of Justice to proceed in the matter?"

"I am, yours sincerely,

"LOUIS C. CRAMTON."

"The Secretary of the Interior, Doctor Work, is taking a highly commendable interest in the case and, the matter being thus brought to his attention, asked Mr. Cameron and his associates to vacate the Cape Horn claim, Alder and Willow mill sites, and the 55 placer claims located in 1919, which have no standing, as they were located after the national monument withdrawal of 1908." This not proving effective, he has requested the

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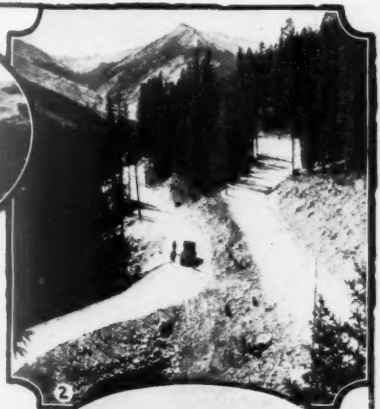
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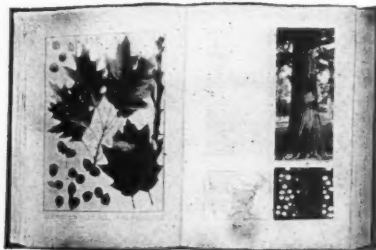
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Attorney General to instruct the United States district attorney to take appropriate action to protect the interests of the United States and the public in the Grand Canyon National Park.

"Now the administration of the park is in the National Park Service, and the Cameron claims at Indian Gardens have been denied by the highest court in the land, but a representative of Ralph Cameron still holds possession of disreputable-looking tents and shanties in this oasis where should be rest for the weary and travel sore.

"Neat toilets are greatly needed, but a lawless squatter prevents. The water that comes babbling down from pure springs above is defiled from old 'Cameron claim' privy tanks, near which the brook flows.

"That the hostility to any improvement or progress is active and real you may judge from this recent telegram:

"'GRAND CANYON, ARIZ.,
'February 12, 1924, 11.22.

"'THE DIRECTOR NATIONAL PARK SERVICE,
'Washington, D. C.:

"'On Saturday, at a point approximately 100 yards below the red house formerly used by Kolb brothers, on Indian Creek, in the canyon, and below Indian Gardens, was installed by my permission a water weir and gauge for measuring the flow of Indian Creek by engineers Santa Fe Railroad on a water-procuring plan.

"I may say that one of the difficulties in administering the Grand Canyon National Park is the absence of water, and it must be hauled in by railroad trains.

"Today we find that this weir and water gauge has been destroyed by an explosion placed and set off by persons unknown, but presumably the caretaker at Indian Gardens. This man had stated that he would destroy the weir and gauge. Wire instructions.

J. R. EAKIN,
Park Superintendent.

"The following memorandum from the department gives the latest status of this matter:

"OFFICE OF THE SECRETARY OF THE INTERIOR,
'March, 1, 1924.

"I phoned Mr. Cameron at 4:30 today, reading him the attached telegram.

"He advised that he wanted to do everything possible to co-operate and would wire the custodian of the property to allow them to go ahead and use the water in whatever way they saw fit.

"E. K. BURLEW,
'Administrative Assistant.'

"There came in, under date of February 25, a letter from the authorities in charge of the Grand Canyon National Park, in which it was stated that a recent official examination had shown that the water that is available for the use of the tourists at the lunch place below Indian Gardens has typhoid bacilli to the extent of from 800 to 1,500 per cubic centimeter. Now, that is going to be news for my friend from Oklahoma [Mr. Carter], because he and I, about a year ago, drank several centimeters of that water, and I do not know how many thousands of typhoid germs, and every tourist who has passed there in the last year has been drinking that impure, menacing water, and even after it has been called to the attention of the trespassers.

"There is a spring a little above that, which is now dominated by Ralph Cameron's caretaker, and when this situation was discovered a request was made of that caretaker that use of the water from the spring by tourists be permitted. It was promised; but a telegram that came to the National Park Service last Saturday afternoon not only carried the news that the public was being prevented from using the pure water from the spring, and were forced to use the other water, but that the notice which had been put up to give the public warning of the dangerous character of the water at the lunch station had been torn down by Mr. Cameron's caretaker."

The final outcome of the debates in the Senate was the adoption of the following amendment:

"For the purchase of Bright Angel Toll Road, within the Grand Canyon National Park, \$100,000, or so much thereof as may be necessary, to be immediately available and to remain available until expended: *Provided*, That no purchase shall be made of the said Bright Angel Trail until the people of Coconino County, Arizona, shall have ratified said purchase by vote at an election for such purpose."

The proviso was offered by Senator Cameron.

In the House, the original amendment was modified to read:

"For the construction of trails within the Grand Canyon National Park, \$100,000, to be immediately available and to remain available until expended: *Provided*, That said sum may be used by the Secretary of the Interior for the purchase from the county of Coconino, Arizona, of the Bright Angel Toll Road and Trail within said park under such terms and conditions as he may deem proper, and the Secretary of the Interior is authorized to construct an approach road from the National Old Trails Highway to the south boundary of said park."

And here the two branches of Congress became deadlocked and have remained so for almost six weeks. On March 20 Representative Cramton summed up his version of the fight in the following statement:

"Mr. Speaker, there is a warfare waged against the appropriation that has been recommended by the House concerning the Bright Angel Trail, leading down into the Grand Canyon, and I have spoken heretofore on this subject. I am constrained by the rules of comity between the two Houses, although that comity has not been observed in this matter at the other end of the Capitol. But I want to make this one statement now, that the opposition to the action recommended by the House centers in a man who, while denying that he is a party to any litigation concerning mineral claims now or for a number of years heretofore, was a party to litigation in the Supreme Court of the United States in 1920, and in that case his asserted rights were denied. It was denied that he had rights, but he is still, in defiance of that decision, maintaining possession of strategic points in the Grand Canyon National Park and has even in the past month interfered with the furnishing of water safe to drink to park visitors or the providing of facilities necessary to comfort and health—

"Mr. BANKHEAD: Will the gentleman yield?

"Mr. CRAMTON: In a moment—and that so far not being a party to litigation, he has within a month been in conference with the Secretary of the Interior, asking that in pending litigation over mineral claims in the Grand Canyon the hearing be postponed until after the adjournment of Congress, so that he may attend the hearing upon it in Flagstaff. I now yield to the gentleman.

"Mr. BANKHEAD: In view of certain precedents that have been established, does not the gentleman think it might be a good idea to send some marines out there to see that the interests of the Government are protected?

"Mr. CRAMTON: There might appear to be something in the gentleman's idea, in view of precedents that have been established."

Representative Cramton was referring to Senator Cameron, of course. The decision of the Supreme Court dispossessing the latter of his Cape Horn claim, upon which he operated a livery stable, was rendered in April, 1920. A year later a like decree, affecting the mill-site claims in the Indian Gardens, was rendered by the United States District Court of Arizona. This decision enjoined Cameron and others acting for him from the use of these tracts and required him to move "all buildings, structures, and improvements" within sixty days. This period expired on April 10, 1921, but by that time Mr. Cameron had become Senator Cameron and was in Washington for the special session of Congress.

The unsightly structures on the Cameron claims have not yet been removed. Why has the Government delayed to act? Why has it not bought long ago, at a fair price, Bright Angel Trail? And thus the picture ends as it began, with many questions unanswered.

EDITOR'S NOTE

On May 14, the conferees of the House and Senate held a final conference on the Bright Angel Trail item, but failed to come to terms. They, therefore, agreed to disagree and the fight was thereby carried back to the floor of the two houses where proponents of the legislation expected to demand a *viva voce* vote and thus place every senator and representative clearly on record.

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But *genuine* White Pine is the chosen wood of the pattern-maker, the model-maker, the wood-worker in any craft who needs a close-grained soft wood that works easily and holds true.

These men have been hearing all kinds of substitute talk—"Well, White Pine is just about played out. You can't get the good stuff any more."

The fact is that there is enough *genuine* White Pine in Idaho alone to take care of all the legitimate needs of generations to come. The real thing

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same *personal* responsibility that leads the Weyerhaeuser organization to brand its White Pine both with the Weyerhaeuser trade mark and with the *species-mark* as well.

THE Weyerhaeuser Service Man is now planning his engagements ahead. We should appreciate early correspondence from manufacturers and lumber merchants who wish to have this Weyerhaeuser *personal* attention.



Here is a White Pine pattern that has seen continuous service for more than thirty years. It is a pattern for a truck end, and was made in 1892 for the Northern Pacific Railway. The only repairs necessary in that time were a few small iron strips to hold the sections together. An exceptional record, to be sure, but one that clearly indicates why White Pine has always been preferred by the pattern maker.



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AROUND THE STATES

CONNECTICUT ACQUIRES HISTORIC SPOT AS STATE FOREST

The Barkhamsted Lighthouse, famed in history and fable of Connecticut for more than 100 years, has become a part of the new People's Forest in that town, State Forester Austin F. Hawes announces. The latest addition to this project, which the women's clubs of the state are backing through the Connecticut Forestry Association, is a tract of ninety acres and makes the land already turned over to the state 400 acres.

At the present time there are no houses at the old "Lighthouse," but there are the cellar-holes of several log huts and well-preserved Indian burial ground is extant. Tilden's map of Connecticut, dated 1876, uses the conventional lighthouse sign that marks shipping beacons along the coast to mark the spot, about seventy-five miles from the sea-coast.

All that remains today to mark the historic and romantic spot are the cellar-holes of the cabins and the Indian cemetery. Mr. Hawes believes it to be one of the most beautiful spots in Connecticut and says it is exceptionally fine for camping parties. On the banks of the winding Farmington River is a growth of fine timber that shades soft turf.

PRIZES AWARDED BY LUMBERMEN

The National Lumber Manufacturers' Association recently announced the award of its annual prizes for the most practical idea, device, or invention for the elimination of waste in the lumber industry. The first prize, \$1,000, was awarded to John Williams, superintendent of A. C. Tuxbury Lumber Company, Charleston, South Carolina, for his invention of a railroad portable sawmill, adaptable to the utilization of small logs without bringing them to a central plant. The second prize, \$500, was awarded to Leon G. Pattison, of Everett, Washington, employee of the Weyerhaeuser Timber Company, who invented a device for oiling the collars of big edgers while in operation. The three third prizes, \$100

each, were awarded to Frank M. Hooker, of Oregon, for a quick detachable universal pipe coupling for laying water lines for donkey engines over rough ground; H. R. Biedermann, of Alabama, for a snubber that eliminates lost motion in a head-block movement; S. M. Bump, of California, for a high-wheel log-carrier, designed particularly for use in rough country.

STANDARD OIL FALLS IN LINE

Convinced that highway advertising signs detract from the natural beauty of the great routes of travel of the Pacific coast, the Standard Oil Company of California has decided that it will erect no more such signs, and that it will immediately remove all of its signs of this nature now standing. Hereafter the company will confine its use of signs to commercial locations.

The company feels that the splendid scenery so characteristic of nearly all of the highways of California, Oregon, Washington, Nevada, and Arizona should be unmarred, and on that account is willing to sacrifice the advertising value of the signs.

WESTERN LUMBERMEN TO INVESTIGATE FOREST POSSIBILITIES

A significant movement of American lumbermen to investigate private forestry opportunities has been inaugurated by a group of prominent Pacific coast companies in co-operation with the Western Forestry and Conservation Association. Actual field study has been begun to cover representative land and economic conditions in several of the most important Pacific type regions. Several hundred thousand acres already selected will receive preliminary examination the first season, after which further extent and detail of the project will be determined in order to guide work likely to continue several years.

Companies pioneering in this co-operative investigation are: In Washington, St. Paul and Tacoma Lumber Company, West Fork Logging Company, Weyerhaeuser Timber Company; in Oregon, Booth-Kelly Lumber

Company, Hammond Lumber Company, Shevlin-Hixon Lumber Company; in California, Michigan-California Lumber Company; in Idaho, Potlatch Lumber Company. The distribution of their holdings enables covering the most representative Douglas fir, western pine, Sierra and Idaho white pine types.

The Western Forestry and Conservation Association is directing the project, under the supervision of E. T. Allen, through a newly organized research department, employing as its forester Norman G. Jacobson, formerly inspector of co-operative fire protection for the Forest Service, but more recently employed by private concerns in working out operating, cut-over land, and exchange problems. The work will also have the co-operation of the Association's protection department, for many years conducted by C. S. Chapman. Mr. Chapman is resigning to become forester for the Weyerhaeuser Timber Company and will be succeeded by R. H. Chapler, who has had long experience as federal representative in the co-operative contact of government, state, and private protective agencies.

SPRUCE BUDWORM IN MAINE

In determining the yields of second-growth spruce and fir in the Northeast, members of the Northeastern Forest Experiment Station encountered in almost all parts of the spruce region in Maine the after-effects of the spruce budworm. The damage by this insect to stands of spruce and fir over twenty years of age has been enormous. In a number of places as high as 75 per cent of the stand has been killed outright. The damage, however, is not only limited to trees killed, but is seen also in a great decrease in growth in the last 10-year period. Out of 800 trees bored into, only a very few showed normal growth. A range of 20 to 25 per cent of the usual diameter growth was commonly attained. Conservatively estimating on the acreage studied, the surviving trees, rarely made more than 50 per cent of their usual growth.

National Forest Timber FOR SALE 19,710,000 FEET

LOCATION AND AMOUNT—All the merchantable dead timber standing or down and all the live timber marked or designated for cutting on an area embracing about 4,600 acres in Township 21 North, Ranges 3, 4, and 5 East, and Township 20 North, Ranges 4 and 5 East, G. & S. R. B. & M., Garland Prairie Unit, Tusayan and Coconino National Forests, Arizona, estimated to be 19,710,000 feet B. M., more or less, of western yellow pine, together with an unestimated amount of hewn ties and mine props to be taken at the option of the purchaser.

STUMPAGE PRICES—Lowest rate considered is \$3.50 per M feet B. M.

DEPOSIT—\$4,000.00 must be deposited with each bid, to be applied on the purchase price, refunded, or retained in part as liquidated damages, according to conditions of sale.

FINAL DATE FOR BIDS—Sealed bids will be received by the District Forester, Albuquerque, New Mexico, up to and including June 27, 1924.

The right to reject any and all bids is reserved.

Before bids are submitted full information concerning the character of the timber, conditions of sale, deposits, and the submission of bids should be obtained from the District Forester, Albuquerque, New Mexico, or the Forest Supervisor, Williams, Arizona.

ALASKAN TIMBER BUSINESS EXPANDS

Lumbering in southeastern Alaska is now getting established on a better foundation than in the past. Prior to the last two years the mills depended almost entirely on the local market and as this is limited and also very erratic, owing to the varying demands of the salmon canneries from year

to year, the mill operations were seasonal and interrupted; but the general lumber markets have now been entered and the additional amount and better quality of the material cut for export have greatly lengthened the milling season and otherwise strengthened the local industry. The exports for 1923 totaled 6,400,000 feet, composed of one-half clears and one-half merchantable grade. The principal local demand is for common lumber.

Further evidence of the healthy condition of the industry is the fact that the three largest mills plan on doubling their capacities, and the principal logging concerns are purchasing much new machinery.

The government-owned Alaska Railroad also uses large quantities of hemlock for ties and took about six million feet of timber, stumpage free, from National Forest lands along its right of way for this purpose during the year. The railroads of Alaska are getting excellent service from hemlock ties, which have an average life here of nine to ten years.

The pulp and paper industry has not yet developed to any extent, but the prospects are favorable for one or more large plants within the next two years. A firm of San Francisco capitalists has secured Federal license for power development at Cascade Creek, on Thomas Bay, near Petersburg, and has been given a conditional award of a near-by timber unit of two billion board feet on the National Forest. This power and timber unit is generally regarded as one of the best pulp and paper offerings in Alaska.

GIFTS TO FOREST SCHOOLS

The Yale School of Forestry has received, as a gift from Charles Lathrop Pack, \$2,000, the gift to be known as the Charles Lathrop Pack Foundation Forestry Prize. The income from the money is to be awarded annually, at the commencement, for the best essay, article, or story of popular interest on some forestry subject. The contest is to be open to every regularly enrolled student at the Yale School of Forestry and to seniors of the combined course. A committee of the faculty is to act as the judges.

In line with past gifts to a number of the forest schools Mr. Pack has also given to the Department of Forestry, Cornell University, a similar fund, which will furnish an annual income of \$50, which is to be used in awarding prizes for the best essays on forestry. The purpose of these prize contests which Mr. Pack is stimulating at the forest schools is to aid in training foresters in writing articles which will arouse in the public an interest in forestry and an appreciation as to what forestry means to the country.

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Broadwater's Discovery

[Continued from page 336]

Having acquired his tract of nature-planted maples, Mr. Broadwater protected his young trees and watched them grow. When they were about seven years old—it would have done no harm to start even earlier—a thinning was made, so that the most vigorous trees would have an opportunity to develop good crowns. So vigorously did the trees respond to this treatment that it has been profitable to go back several times and remove still other trees to eliminate the crowding of crowns. In all, it is estimated that over thirty cords of usable firewood have been taken out of the nine acres in the orchard, and there are left eighteen hundred well-spaced, healthy-crowned trees averaging four inches in diameter and from twenty to twenty-five feet in height. Some of the more favored trees, which had plenty of light from the start, are now seven inches in diameter and will be ready to tap in another decade.

It is interesting and inspiring to drive through the maple-sugar section of Garrett County, around Bittinger and Grantsville. In many a grove are stately sugar maples measuring over two feet across the stump. For half a century and more they have been giving of their sap each spring to make that delectable and almost essential accompaniment of buckwheat cakes, maple syrup—syrup that for richness and flavor is equal to the best that Ohio, New York, or Vermont can produce. The observer, however, cannot fail to note that these splendid groves are on the decline. Trees, like human beings, mature, become aged, and finally die. In the case of the sugar maples, though each successive set of wounds fill up and eventually heal over, the annual piercing of the trunk does permit the easy entrance of the germs of decay, and so in a measure hastens the final death of the trees. On trees whose trunks still seem sound and strong, a look at the crown often reveals frayed stubs where winter winds have wrested out great branches; and here and there are gaps in the groves where veterans of the past have already succumbed.

As if to hasten the destruction of the maple-sugar industry of the county, a visit to the sawmills of the region will reveal many maple logs waiting to be converted into lumber. Some short-sighted owners have actually cut down sound trees in their maple groves and sold them for lumber. Certainly this is a 20th-century version of killing the goose that laid the golden egg. One case especially is cited, where the farmer got in cash for each tree an amount just equal in value to a two years' yield of sugar.

But even this double-fronted attack on the sugar-maple groves of Garrett County would not in itself give cause for alarm, if there could be found a sturdy race of young trees surging up to take the place of the veterans. The mature trees have certainly done their

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part to insure a host of young seedlings by littering the ground with a carpet of seed. Last fall in particular it would have been an easy matter to rake them up by the bushel. It is not Nature that is at fault. The trouble is that the tender seedlings make excellent browse for the ever-present sheep, and where the land is not accessible to sheep, brush-hooks and fire have been equally effective in discouraging the young trees. The chestnut blight, a bark disease, will in a few years wipe out the last remaining chestnut groves in the county, and it looks as though man or his agents, sheep and fire, were going to be equally effective in the case of the sugar maple.

With these facts forced home by observation of actual conditions, it was most refreshing to find one man who had helped, and who is helping rather than hindering, Nature to reproduce the fine old sugar-maple groves of the region. At no cost, and with only the effort of a few days' light ax work in the winter, when other farm work is at a standstill, Mr. Broadwater has established a splendid young orchard. Garrett County soil and Garrett County climate is doing the rest.

VIRGINIA FIRE CONTROL SHOWS PROGRESS

The forest wardens' fire reports in Virginia for 1923 show a reduction as compared with the 1922 record, in the average area burned over per fire, of 28 per cent. The corresponding reduction in the average damage per fire of 12 per cent is also indicated. April is again the month during which most of the fires and a large percentage of the danger occur, 63 per cent of all fires reported having been located in that month in this state.

The total number of forest wardens in Virginia who were active or ready to act during the past year was 49 chief wardens, 219 district wardens and lookout watchmen, and 362 local wardens, making a total of 630 wardens, as compared with 430 in 1922.

The Lure of the Land Above the Trees

[Continued from page 357]

mountains are awaiting you. Their moods, their hazards, their secrets, you must find out for yourself. All in all they offer one of the most splendid fields of sport to be found on the American continent. They dare you to climb them, these monarchs of the high ranges that darken or shine in regal splendor at the topmost climax of our Rockies. If you accept the dare, some day you will discover yourself climbing Sierra Blanca, the most engaging mountain personality in the West.

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Storm Gods of the Holy Cross

[Continued from page 369]

a half miles down the canyon, where I kept a small supply of blankets and grub.

"Intent upon my work, I had not noticed that the sky had become all riled with milling clouds, and that a storm was brewing. But now there wasn't the least doubt but that a heavy electrical battery was coming directly toward me. As it broke over Williams Mountain, to my right, it looked for all the world like a solid bank of water over a thousand feet high—rolling straight toward me, too. Through it vivid lightning flashed every second, while along the crest of the mountain a wall of fire seemed to crumble like a great forest ablaze.

"I realized I couldn't outride it, so hastily donned my coat and slicker. When the storm struck me, it seemed like I had ridden under a gigantic waterfall. I could scarcely see or distinguish anything. Suddenly a dazzling light enveloped me and a force, as of a mighty wind, struck me from behind. Together, my horse and I seemed to fly from the trail over the bank, and I saw the willows along the creek coming up and up to meet me, then—oblivion.

"I was in a dazed or unconscious condition the remainder of the night, except for a few moments, when I seemed to be searching for something among the wet weeds and willows, and later when I was hunting for matches after I had reached the cabin. How

I got there I do not know. At about 9 o'clock next morning I seemed to awaken. I was sitting in the cabin, with my feet in the oven of the small cook-stove. I had built a fire, which was now entirely out. I still wore my slicker and only my feet and legs were wet. I was very weak, suffering from thirst, sore and bruised, my mouth bleeding, and some of my front teeth were loosened and aching.

"I went outside and found my saddle lying under the pine tree where I usually hang it and my horse was picketed in the usual place. With considerable difficulty I got the saddle on, but could not mount until I led him down to a large stone beside the road, from which I fell into the saddle. I then started on the sixteen-mile ride down the mountain toward home. Many times I fell from the saddle or dismounted to drink, and then, in my weakened condition, I staggered on or lay where I fell until I regained strength enough to remount and ride on. At first I feared my horse would leave me, but later I tied up the reins, hoping that he would go on home if I could not continue the journey, and thereby show my need of assistance; but through it all the faithful beast never left me. He is trained to the running mount, and once, after a long rest, when I mounted from the ground, he ran with me, and I was forced to cling with both

hands till I could talk him down to a walk.

"I arrived at the closest ranch, three miles from town, about 3 o'clock. Only twenty-one hours had elapsed, but to me it had seemed an eternity. I asked the children, playing in the yard, to telephone my wife I was on the way home, that I was sick, and for her to come and meet me. The ranchman then came out and tried to take me off the horse, but even in my semi-delirious condition the thought of getting home was uppermost, and I resisted and rode on. About one mile further I again fell from the saddle, and when my wife arrived with help she found some fishermen trying to revive me, and 'Buck' standing patiently close by. A half hour later I was in bed, with a physician in attendance.

"Paramount among the many excellent qualities which my wife possesses is that of nursing, and in a week I was as good as new, except that I 'spoke in foreign tongues,' having been forced to give up six perfectly respectable front teeth.

"By that time 'Buck' was over his stiffness and we were again on the job, thankful that the Supreme Forester of the Universe had spared us to labor yet a few suns more in this beautiful bit of His handiwork. It may be of interest to note that I have no unreasoning fear of lightning, and 'Buck' did not lose his appetite for Uncle Sam's oats."

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TECHNICALLY TRAINED FORESTER, at present employed, desires to change his position. Has had several years' practical experience in all phases of forest work. Would like to correspond with any person, corporation, or municipality desiring to employ such a man. Address Box 7045, care of AMERICAN FORESTS AND FOREST LIFE, Washington, D. C. (3-5-24)

GRADUATE FORESTER—B. S. in Forestry 1910, with thirteen years of experience in both field and office work in forestry and forest engineering. Would like opportunity of organizing a forestry or forest engineering department for a pulp or mill concern. Best of references furnished. Address Box 7050, care of AMERICAN FORESTS AND FOREST LIFE, Washington, D. C. (4-6-24)

YOUNG MECHANICAL ENGINEER would like, for change and recreation, any kind of work in the woods for the summer season. Salary of less importance than good company. Address Box 7055, care of AMERICAN FORESTS AND FOREST LIFE, Washington, D. C. (4-6-24)

GRADUATE FORESTER, B. S., M. S. F., Michigan University, 11 years' experience with U. S. Forest Service in California, Idaho, and Montana; one year railroad location and construction work; wishes position with lumber company or state service as forester or logging engineer. References furnished if desired. Address Box 7060, care AMERICAN FORESTS AND FOREST LIFE, Washington, D. C. (5-7-24)

FORESTER-LAWYER, studied at two forest schools and law-school graduate. Studied commerce one year at university. At present engaged in graduate study of economics as related to forestry at an eastern university. Desires to locate with a forest-products concern where a knowledge of both law and forestry will be useful. Interview desired. Available June 15th. Address Box 7065, care AMERICAN FORESTS AND FOREST LIFE, Washington, D. C. (5-7-24)

FOREST SCHOOL GRADUATE with some forest experience in the West and with training and wide experience in horticulture, including tree surgery, desires to return to forestry; either state, private, or municipal; preferably the latter. Forest experience includes blister-rust work with the U. S. Government. Full particulars and references given on request. Address Box 7070, AMERICAN FORESTS AND FOREST LIFE, Washington, D. C. (6-8-24)

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Bermuda Wedding Trees

[Continued from page 363]

fully protected and cared for; so that should there be children of that marriage they might be so fortunate as to be able to have some article made from that tree at the time of his or her marriage.

The "Cake Tree" in front of the Hotel Bermudiana was planted on May 2, 1816, on the occasion of the marriage of Captain Sir William Crisp Hood Burnaby, retired captain in Her Majesty's Navy, to Mrs. Eleanor Wood, widow of the late Captain Joseph Wood, of Pembroke, Bermuda. Lady Burnaby, who survived Sir William for nine years and died in 1862, at the age of 78 years, must have had a very happy life on which to look back. Born in 1784, the only child of Samuel and Susannah Wood, she grew to be a very lovely girl, not only in feature and form, but in character, and was idolized by her parents and numberless relatives. When she was seven years of age there was a vessel to be launched belonging to a cousin, by name Joseph Wood, and on that vessel, as she went off the stocks, Eleanor broke the bottle of champagne, and gave the name *Little Eleanor*. Many successful voyages did Joseph Wood make in the *Little Eleanor*, and when twelve years had passed by he wooed and married his lovely cousin. He then owned the property known for the past 100 years in Bermuda as "Long House," which historic home has now been demolished in order to make way for the new order of things, and the Hotel Bermudiana reigns in its stead. One link only with the past remains, and that is the "Cake Tree."

Joseph and Eleanor Wood had one child only, Susannah, who married Robert Kennedy, Colonial Secretary of Bermuda for 50 years, and on the day of her marriage she, too, planted a tree in front of "Rosebank," which had been built for her, just to the eastward of her mother's home. Joseph Wood by will gave his entire property to his wife for her life, and then to their daughter "Susannah." Mrs. Kennedy gave the whole to her husband, who in turn willed it to a nephew in England. This nephew then sold the two properties. "Rosebank" went to Mr. John Bluck, the grandfather of William Bluck, the present mayor of Hamilton, and "Long House" was bought by Mr. William Baw, who had married a god-daughter and namesake of Lady Burnaby.

THE FUTURE OF LAKE STATES WHITE PINE

Of the 350 billion board feet estimated to have comprised the original stand of white pine in the Lake States, 300 billion have been cut, more than 40 odd billion have been destroyed by fire, and possibly five billion board feet, mainly in Minnesota, remain to be cut, according to the Forest Service, United States Department of Agriculture.

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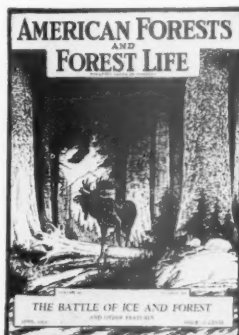
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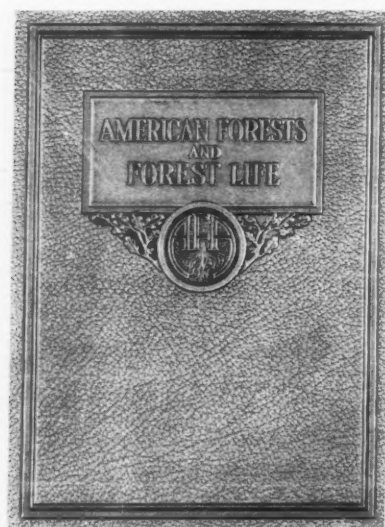
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